NWMTS

NORTHWEST METRO TRANSPORTATION STUDY

March 1988

Prepared by:

Metropolitan Toronto Planning Department, Transportation Division

NORTHWEST METRO TRANSPORTATION STUDY
NEEDS ANALYSIS

METROPOLITAN TORONTO PLANNING DEPARTMENT
METROPOLITAN ROADS AND TRAFFIC DEPARTMENT
TORONTO TRANSIT COMMISSION

Assisted by McCORMICK RANKIN
in association with TRANPLAN ASSOCIATES LIMITED

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EXECUTIVE SUMMARY

STUDY PURPOSE

This study report documents the completion of the first phase of an intended two-phase study of transportation deficiencies within northwest Metro. Phase I has involved the identification of current and likely future deficiencies and in most cases has identified potential solutions which will need to be examined in more detail. The purpose of Phase II therefore, will be to identify more clearly potential solutions to these problems and evaluate specific design options through the conduct of environmental and feasibility studies, operational studies and, in the case of Metro boundary issues, studies leading to improved coordination and expansion of transit services.

STUDY APPROACH

The identification of current and future deficiencies involved three main steps, these being:

- overview assessment of conditions for the study area on a sub-area and corridor basis;
- consideration of specific issues; and
- synthesis of the overview and analysis of specific issues.

A Steering Committee made up of senior staff from the Ontario Ministry of Transportation, Metropolitan Toronto Planning and Roads and Traffic Departments and the Toronto Transit Commission provided overall direction to the study while a Working Committee comprising of staff from the above organizations plus representatives from municipal agencies within and adjacent to the study area, provided technical input to the study and reviewed ongoing work throughout the study. The consulting firms of McCormick Rankin and Associates Ltd. and Tranplan Associates were retained to provide assistance to the study.

OVERVIEW

Existing Conditions:

Information for the study area was obtained from the following data sets:

- cordon count trends (auto, transit, truck);
- screenline and intersection volume/capacity data;
- auto and transit speed data;
- accident data;
- journey-to-work origin-destination data (1981 Census); and
- synthesized modal split and origin-destination data from the Metropolitan travel demand model.

The various data sets were found generally to confirm areas of deficiency and led to some confidence in creating an overview of current conditions. It has to be stressed that the overview stage, because of the large study area, did not attempt to identify every specific transportation deficiency. On a sub-area basis, the following problem areas were identified:

- inner urban area, generally (mostly City of York and western Toronto). This area is characterized by:
  - low auto and transit speeds due mainly to narrow right-of-way and pavement widths, inadequate intersection capacity, on-street parking and certain discontinuities in the road system, in particular, Allen Road at Eglinton Avenue;
  - declines in population and employment (mostly industrial) since 1971;
  - localized auto and truck origin-destination patterns in the area;
- Peel/Metro boundary, south of and including Highway 401. This area is characterized by:
  - most boundary roads operating at, or close to, capacity in 1985. The widening of Highway 401 in 1985 has relieved traffic on most boundary roads since then. However, the continuing increase in traffic is likely to absorb the spare capacity over the next few years;

  - congestion mainly west of Highway 427 as this expressway distributes much of the cross-boundary traffic to destinations in Etobicoke (50-60% of current auto demand) and to points further east via Highway 401 and the QEW/Gardiner;
  - lack of a complete municipal transit grid resulting in a low transit modal split particularly for trips destined to Etobicoke (0-10%). Current services focus primarily on the Bloor subway, which along with GO services, combine to achieve a transit modal split of between 64% and 79% to the Central Area.
- York/Metro boundary area (including the area bounded by Dufferin, Bathurst, Finch and Steeles); This area is characterized by:
  - all intersections in the area bounded by Dufferin, Bayview, Finch and Steeles operating at, or close to, capacity;
  - most cross-boundary auto trips (50% - 60%) from York Region to Metro are short distance (i.e. to areas in Metro north of Highway 401);
  - relatively low transit modal split from Vaughan to all Metro destinations.

In addition, two major expressway links are currently experiencing demands greater than capacity, these are:

- QEW/Gardiner, between the Humber River and the Central Area; and
- Highway 401 through Etobicoke.

Population and Employment Trends:

The employed labour force (e.l.f.) for the Greater Toronto Area (G.T.A.) is forecast to increase by approximately 600,000 (35%), and approximately 20,000 (2%) for Metro as a whole between 1981 and 2011. However, e.l.f. is forecast to decrease by between 8% and 13% in various parts of the study area. The only areas in the vicinity of the study area that are forecast to increase are the Central Area and southern Etobicoke. Conversely, all parts of the study area are forecast to increase employment opportunities by anywhere between 5% and 28% (mostly around 20%), with the main growth being around the outskirts (or just outside) the study area. In particular, the main areas of employment growth affecting travel in the study area include the Central Area (a third of all Metro growth), the North York and Islington/Kipling Centres and the area in the general vicinity of the Lester B. Pearson International Airport (see Exhibit 17 in the main report).

Travel Demand Trends:

Declining labour force and increasing jobs in the study area have a resulting 'triple inter-regional effect' on future travel demand growth. This effect is to increase inter-regional trips on three fronts:

1. increase in trips to new Metropolitan jobs;
2. increase in trips to existing Metropolitan jobs vacated by a decline in the Metropolitan work force; and
3. increase in trips to existing Metropolitan jobs vacated by Metro labour force increasingly filling new jobs outside Metro.

The area most effected by this triple inter-regional effect is Etobicoke. It is forecast that a net increase, between 1981 and 2011, of 4,900 peak hour trips destined to Etobicoke will be the result of an increase of 11,900 trips from outside Metro (mainly from the west) and a decline of 7,000 trips from Metro, including Etobicoke itself. Further examples are given in Section 4.0 of the main report. This 'triple effect' is forecast to occur throughout northwest Metro in particular and is a result of the projected declines in the Metro "e.l.f./employment" factor from 1.14 in 1981 to 0.83 in 2011.

As a result, the following trends in travel demand are forecast for the study area:

- major growth inbound at the Metro boundary (in particular Peel/Metro below Highway 401 and York/Metro, from Dufferin to Bayview);
- home-to-work trip lengths will continue to increase and therefore be more oriented to the expressway and commuter rail systems;
- Q.E.W./Gardiner and Highway 401 are shown to be high growth corridors;

- little or no growth forecast from/to the inner urban area due to a declining labour force and only a modest increase in employment. However, the inability of the expressways to handle the large forecast volumes will tend to force traffic onto the arterial road system with the net result of the loss of local trip making being replaced by a greater proportion of inter-regional trips;
- no growth in trips from Metro (other than from the Central Area itself) to the Central Area (C.A.);
- a decline in trips from the inner urban areas to the C.A. of between 10% and 20% which could result in a decline in ridership on many inner area T.T.C. surface routes (and possibly the Bloor subway) and auto volumes on some inner area arterial roads. Increases in T.T.C. ridership would be expected in the outer Metropolitan areas following the introduction of transit fare integration and service coordination;
- inter-regional trips more likely to be auto oriented than trips from the older urban areas of Metro which are served by a dense T.T.C. transit grid;
- diversity of origins-destinations of the inter-regional trips make it difficult to serve a significant number of these trips by rapid transit (other than to the C.A.) thus emphasizing the need for both road and surface transit improvements; and
- a forecast 50% decline in 'school-age' children in Metro will also likely reduce T.T.C. ridership in many areas.

The net result of the forecasts is that future pressures will continue to be on two of the three sub-areas where transportation deficiencies presently exist; i.e. Peel/Metro boundary and York/Metro boundary. The exception is the inner urban area where no significant growth is forecast. In addition, continuing pressure on the expressway system is forecast (particularly Highway 401 and Q.E.W./Gardiner) due to increasing trip lengths and the more auto oriented travel behaviour of the increasing inter-regional commuters. This will result in a further deterioration in the utility of these strategically important expressway links as well as 'spill-over' onto adjacent arterial roads.

SPECIFIC ISSUES

Ten issues were identified either through the terms of reference or the Working Committee which were thought to be worthy of specific study. In keeping with the nature of a 'needs analysis', the approach has been in the first instance demand responsive rather than strategically oriented. Certain strategic goals are identified in the 'Support of Development' issue on page xi of this Executive Summary. It has to be remembered however, that these goals need to be pursued in a joint land use/transportation context. The ten issues are discussed briefly below:

Declining Transit Speeds

- surface transit speeds are lowest in the older urban areas of Metro and particularly those close to the C.A. and highest in the outer areas of Metro (Etobicoke and Scarborough in particular);
- the routes where speed is most likely to be negatively impacted in the future are those in the outer urban areas due to the high inter-regional travel demand forecasts. However, these areas afford the best opportunities to improve the road system;
- segments of seven inner area routes have been identified, (see section 5.1) which, due to a high ridership and low speed factor, are worthy of further study to determine appropriate measures to reduce T.T.C. costs and passenger journey time. Speed/delay studies should be carried out to determine the primary causes for the low speeds (e.g. congestion, parking, high passenger turnover, etc.) and appropriate improvements (including transit priority measures) evaluated.

Inter-Regional Travel Issues:

- current capacity problems at the Peel/Metro boundary (below Highway 401) and York/Metro boundary (central section), along with high forecast travel demand. Between 50% and 60% of Peel/Metro boundary auto trips are destined to Etobicoke/Airport, while approximately the same percentage of York/Metro auto trips are destined to north Metro (above Highway 401);

- road improvements necessary for these two areas wherever possible along with an immediate need for transit fare integration and service co-ordination (F.I.S.C.) to address the diverse trip making patterns for cross-boundary trips;
- the need to continue to upgrade GO Rail services incrementally to serve inter-regional trips to the C.A. can clearly be demonstrated;
- over time, F.I.S.C. will encourage higher transit usage for cross-boundary travel, but long term growth from the west and north will require higher-order transit initiatives (e.g. busways, bus-only lanes, possibly rapid transit, etc.) to help achieve higher transit modal splits. However, with a continuing diversity of O-D's, single transit solutions will not be sufficient.

Access Into the Central Area (C.A.):

- Central Area growth of 102,000 jobs (between 1985 and 2011) is currently forecast. This is approximately one-third of all Metropolitan growth during this time;
- significant decline in Metro to C.A. trips is forecast likely resulting in a decline in demand for some inner area T.T.C. surface routes and arterial road usage into the C.A. An increase in C.A. to C.A. trips more-or-less balances the loss of 'rest of Metro' to C.A. trips;
- the net result of these changing travel patterns (for both existing and additional trips) is that for every additional C.A. job created over the next 25 years, close to one new inter-regional trip will be generated; the need for GO Transit expansion and increases in expressway capacity (Gardiner in particular) will be the result. Major inter-regional growth is from the west; growth from the north is forecast to be mostly offset by a decline in north Metro to C.A. trips;
- due to a forecast decline in northwest Metro to C.A. area trips, it is difficult to justify construction of a rapid transit facility to provide

extra capacity to serve these trips. However, as improved service on the Georgetown GO Rail line can be justified, this expansion should be implemented in such a way (e.g. new stations in Metro, provision of off peak service) to improve transit accessibility to the C.A. for Metro residents.

Effects of Highway 407:

- Steeles Avenue and Highway 7 will be relieved the most by construction of Highway 407. Additionally, Highway 407 will help achieve a better distribution of north-south traffic between York Region and Metro; and
- forecasts show that while Highway 407 will accommodate some of the traffic growth for Highway 401, the net long term growth for Highway 401 is greater than can be realistically accommodated.

Eglinton Corridor Needs:

- numerous intersections at or close to capacity; Allen Road discontinuity additionally impacts on Dufferin to Bathurst section. Limited opportunities for road improvements (without substantial acquisition of property) plus retention of on-street parking, limits development potential, which is in contrast to the City of York's aspiration to effectively turn Eglinton Avenue into the 'York Main Street';
- relatively low inter-regional travel demand to the area, coupled with a declining population and labour force and only modest increases in employment forecasts make it difficult to justify the early or medium term construction of the Eglinton West Rapid Transit line; and
- to support the establishment of a 'principal focus' (a Metro O.P. policy) at the York Municipal Centre and also improve access to the C.A. for local residents, an Eglinton GO station on the Georgetown line plus the first phase of an inter-regional bus route from the west is justified. Significant upgrading of transit is dependent on Eglinton Avenue being redeveloped to higher densities. Intersection improvements and

relocation of on-street parking as part of the redevelopment will also be required to cater to additional auto traffic generated.

Transit Access to the Lester B. Pearson International Airport and York University:

- current and likely future transit demands to these two nodes do not in themselves justify the construction of rapid transit; and
- these two nodes remain two major trip generators in the consideration of overall systems needs, which is the subject of continuing analysis in the current Northwest Metro Rapid Transit Corridor Study.

The Need for Rapid Transit Corridors serving the Northwest

- the Eglinton Transportation Corridor now designated in the Metropolitan Official Plan, extends from Highway 427 to Scarlett Road. This 300 foot wide corridor is in Metropolitan ownership and can accommodate a future rapid transit line. In addition, Metropolitan Council has approved an amendment to its Official Plan to show a future rapid transit line along Eglinton Avenue from the Spadina subway to the vicinity of Renforth Drive. Such a line if extended westerly to Mississauga City Centre, has the potential to be an important inter-regional transit facility in the future;
- a rapid transit line in the outer Metropolitan area comprising an east-west corridor north of Highway 401, (with the addition of a north-south alignment in Etobicoke) would directly address the high degree of short distance trip making from Peel and York into the outer areas of Metro and would also support the primary North York and Etobicoke centres. The Highway 27/Rexdale node has the potential to develop as a second major Etobicoke centre having a transit focus served ultimately by a northwest rapid transit line;
- numerous road improvements and transit fare integration and service coordination are still to be carried out which will relegate the need to

implement an outer area northwest rapid transit line to the long term (more than 20 years). It should be noted however, that the purpose of the current corridor study (mentioned above) is to identify a preferred corridor for protection for future rapid transit use;

- localized road or transit problems could justify the need to implement improved transit services within the northwest corridor (possibly in the form of a busway) in the medium term to establish transit oriented travel in the interim and support sub-centre growth.

Road System Discontinuities/Bottlenecks:

- major bottlenecks in the study area are the Gardiner Expressway at the Humber River, Highway 401 (Etobicoke section), Allen Road at Eglinton and the Humber River discontinuities at Finch and Wilson Avenues;
- Black Creek Drive discontinuity is not currently a major bottleneck;
- Finch Avenue extension has recently been approved by the Environmental Assessment Board and this project should be completed as soon as possible. The Wilson Avenue extension is required in the medium to long term. If these two missing links can be implemented, an extension of Sheppard Avenue may not be required;
- elimination of the Rathburn Road discontinuity at the Peel/Metro boundary is justified on the basis of continuing inter-regional traffic demands (mainly to Etobicoke) which would be able to take advantage of the existing (and possibly an improved) connection to Highway 427;
- extension of Kipling Avenue north of Steeles Avenue required to make the road continuous between Metro and a soon to be completed interchange at Highway 407;
- elimination of the Weston Road jog immediately north of Steeles Avenue is currently being pursued by the Region of York.

Needs of the Goods Movement Industry:

- essential (and obvious) need is to minimize time spent on the road system, (in other words, a good level of service is highly desirable);

- the expressway system serves as the trunk distribution network for a large proportion of truck movements (Highway 401 in particular, followed by Highway 427, QEW/Gardiner Expressway) particularly from the newer suburban industrial areas;
- O-D patterns for truck trips originating in the older inner urban areas are much more localized (72% are also destined to the inner urban area);
- truck sizes have continued to increase over the past 30 years; the older urban areas have many roads with sub-standard design standards which have to cope with modern trucks. Additionally, pick-up and delivery facilities in many parts of the older inner urban areas are sub-standard and many deliveries have to be carried out from the street. Pick-up and delivery issues are dealt with in the Metro Toronto Goods Movement Study;
- increasingly, industry is seeking to locate near expressways, unlike most of the earlier industry which sought locations close to the ports and railway lines; and
- the further loss of industry in some parts of the older urban areas of northwest Metro appears to be likely with a declining 'transportation' level of service being one (but not the only) contributing factor.

Support of Development:

- Study area in general:
  - attempts to increase population in Metro (inner urban areas especially) will have a transportation benefit in reducing the more auto-oriented inter-regional travel demands as well as helping to justify the expansion of the rapid transit system in Metro;
  - transit 'Gateways' (e.g. Renforth, Kipling, Rexdale/Highway 27, York "Civic focus") will become increasingly important in encouraging increased transit usage for inter-regional trips and making the best use of GO Rail expansion to serve more than purely the C.A.

- Central Area:
    - increase in C.A. population reduces impact of additional C.A. jobs on the transportation system;
    - GO Rail expansion and the Front Street extension together with widening of the Gardiner Expressway are the most important improvements required;
    - improvements are needed to sustain, but not lead, development. It is therefore, imperative that Metropolitan staff be involved in developing an implementation plan for the incremental expansion of GO Rail services;
    - the existing Central Area Monitoring Program is an important medium through which the timing of improvements can be more precisely determined.

- Inner Urban Area (York and western Toronto)
    - localized trip making (both auto and truck) make numerous intersection improvements to the local arterial road system the most practical way to improve the accessibility of local residents and businesses;
    - support of York's development goals for Eglinton Avenue can be supported on the basis of incremental transportation improvements, with redevelopment of the corridor to significantly higher densities needed to justify the further upgrading of transit services.

- Etobicoke:
    - GO Rail expansion generally will help relieve the road system and specifically improvements to the Milton line will provide support to the Islington/Kipling Centre;
    - ultimately greater use of higher capacity transit routes (e.g. Mississauga busway, E.W.R.T., a 'Northwest' rapid transit line) will be needed to help achieve Etobicoke's development goals. Additionally, focussing of development (e.g. Rexdale/Highway 27

node) around future rapid transit stations is desirable to make the area more transit oriented and able to support higher capacity transit services;

- widening of Highway 27 will be needed to support development at Rexdale/27 area. The timing will depend upon the rate of development and the need to implement exclusive bus lanes to promote transit oriented travel to the centre. In the near term, it would be highly desirable to identify and protect sufficient lands at the centre for the provision of an inter-regional bus terminal to encourage greater transit usage to the node.

o North York:
  - GO Rail expansion and transit fare integration and service coordination will help relieve the road system;
  - road widenings (e.g. Bathurst, Bayview, Finch, Sheppard,) will provide extra capacity to support development in the North York City Centre;
  - in the longer term, higher capacity transit routes (e.g. Sheppard subway) will be needed to achieve the high growth forecasts and help support development goals for the North York Centre;
  - the Downsview airport site remains a tremendous opportunity for a second major centre in North York. Recognizing the need for, and desirability of increased population within Metropolitan Toronto, any development plan for this area should give high priority to the provision of significant amounts of new housing.

CONCLUSIONS

From a synthesis of conclusions from the 'overview' and 'issues' segments of the study, the following overall conclusions were drawn with respect to the needs of north-west Metro:

The Central Area:

- projected demands in the Q.E.W./Gardiner Expressway corridor for the year 2011 will not be accommodated by the current plans to extend Front Street westerly from Bathurst Street to the Gardiner Expressway and widen the Gardiner to provide 4 lanes in each direction. A review should be undertaken immediately to examine ways to maximize the utilization of the improved road facilities in the corridor through implementation of such T.S.M. measures as high occupancy vehicle (h.o.v.) lanes and/or reversible lanes. Implementation of such measures would be facilitated by the previously-mentioned proposals and the proposal to implement a Gardiner corridor traffic management system;
- Expansion of the GO Rail system will be needed to serve additional Central Area development, but should take place incrementally over an extended period of time. Improvements to the Milton, Richmond Hill and Georgetown lines are required and these should include provision of off-peak service to achieve better utilization of peak period capacity.

The Outer Metropolitan Areas:

- fare integration and service coordination between Peel/Metro and York/Metro municipal transit services is needed as soon as possible to increase the extremely low transit modal share for cross-boundary trips;
- due to the inherent 'auto-oriented' tendencies of inter-regional (i.e. suburban) commuters, cross-boundary road connections and widenings are required incrementally wherever possible;
- in addition to transit fare integration and service coordination, long term growth will likely require a number of higher capacity transit corridors (e.g. for implementation of exclusive bus lanes). In the near term, the extension of peak period reserved bus lanes through a widening of Dufferin Street and the Mississauga busway are appropriate initiatives; others will need to be identified. Additionally, a focussing of development around existing and future rapid transit lines (e.g. Rexdale/Highway 27) is desirable as a further incentive to increase transit use in the outer areas;

- in the near-term, it is necessary to identify and protect sufficient lands for the construction of an inter-regional bus terminal at the Highway 27/Rexdale node.

Within Northwest Metro:

- for seven specific transit routes which have high ridership, low speed factors and therefore, potential for significant time and (T.T.C.) cost savings, further study is required to determine the primary causes of low speed and to examine the feasibility of implementing measures which would improve conditions for transit vehicles (and autos where possible);
- an O-D survey of traffic using Highway 401 is needed to determine the extent to which road (e.g. Wilson extension, Eglinton widening advancing the construction of Highway 407) and/or transit initiatives (e.g. E.W.R.T., Northwest corridor) could potentially relieve this strategically important expressway link;
- an Environmental Assessment study of an extension to the Allen Road south of Eglinton Avenue is required. An updating of the 1980 Allen Road O-D survey should be carried out to provide the basis for a comprehensive assessment of all possible alternatives;
- in order to support the City of York's creation of a principal focus at its Municipal Centre (a Metro O.P. policy), and as a first step to establishing more transit oriented travel patterns in the Eglinton corridor, improvements to inter-regional transit access to the York "civic focus" (e.g. by extension of Mississauga busway or provision of a new York Centre GO station) are warranted with further transit improvements dependent on the increase of population and employment densities along Eglinton Avenue;
- in order to improve general mobility in the inner urban area for autos, trucks and transit, and in recognition of the localized trip making patterns and decline in industrial activity, the pursuit of intersection improvements over a wide scale (particularly in the industrial areas) is the most appropriate course of action.

A full list of the study conclusions is given in Section 7.0. Initiatives have focussed primarily on the near to medium term while acknowledging long term implications of the current land use forecasts. It has to be acknowledged, however, that certain Metro policy initiatives, particularly with respect to housing, could change the long term requirements. It has been noted that an increase of population in the study area is considered to be highly beneficial, in that greater use of existing municipal infrastructure including T.T.C. services and the arterial road system could be achieved. By contrast, catering to the more auto-oriented, longer distance inter-regional trip-making from the suburbs of the Greater Toronto Area would lead to the development of a less efficient urban form overall and particularly from a transportation perspective.

1.0 INTRODUCTION

1.1 TERMS OF REFERENCE

The Metropolitan Chairman, in his December 1985 inaugural address to Council, referred to the problem of transportation in the northwest corridor of Metropolitan Toronto. Specifically the Chairman indicated that he would request Metro's Technical Transportation Planning Committee (T.T.P.C.) to "present to a joint meeting of the Economic Development and Planning Committee and the Transportation Committee, a plan of action that will allow us to at least begin to cope with a deficiency that affects a large part of our population".

In response to the Chairman's address the T.T.P.C. concluded that it would be appropriate to initiate a Northwest Metro Transportation Study. This study would be carried out in two phases as follows:

- Phase One would be a documentation of existing conditions; an assessment of future population and employment growth and resultant travel demands; and an identification of specific problem areas and deficiencies; and
- Phase Two would include the identification and evaluation of alternative transportation initiatives that would be capable of solving the identified problems and deficiencies.

Detailed Terms of Reference were prepared for Phase One of the Northwest Metro Transportation Study. These are included as Appendix A to this report.

1.2 BACKGROUND

The boundaries of the area investigated during the Northwest Metro Transportation Study are shown on Exhibit #1. In defining this study area it was recognized that transportation issues within the area were particularly affected by existing and future development beyond the northern and western boundaries and particularly within York Region and Peel Region.

Transportation issues within the study area have been a subject of review for many years. For example the 1948 Transportation Plan for Toronto and suburban areas included proposals for the construction of a number of expressways including two within the study area, specifically the Spadina Expressway and the Highway 400 Extension. The discussion of these and other transportation issues within the study area has been ongoing until the present time.

More recent investigations addressing issues within the study area have included the following:

- The Metropolitan Toronto Transportation Plan Review, completed in 1975, identified the northwest area of Metropolitan Toronto as a special problem area poorly served by roads and transit. Two recommendations included within the M.T.T.P.R. were the extension of the Allen Expressway as an arterial road from Lawrence Avenue to Eglinton Avenue (completed in 1976) and the arterial roadway extension of Highway 400 southerly, as Black Creek Drive, to Weston Road (completed in 1982);
- Specific corridor studies for new rapid transit lines completed in the 1983-85 period. These included the GO-ALRT Northern Section Study, the Sheppard/Finch Rapid Transit Corridor Study and the Eglinton West Rapid Transit Study. These corridor studies led to the development of the Network 2011 plan for the expansion of the Metropolitan rapid transit system. Based on the adoption of the Network 2011 recommendations, Metropolitan Council subsequently approved an amendment to the Metropolitan Official Plan to show an extension of the Spadina subway to Sheppard Avenue, a Sheppard subway from the extended Spadina subway to the Scarborough City Centre and an Eglinton West rapid transit line from the Spadina subway to Renforth Drive.

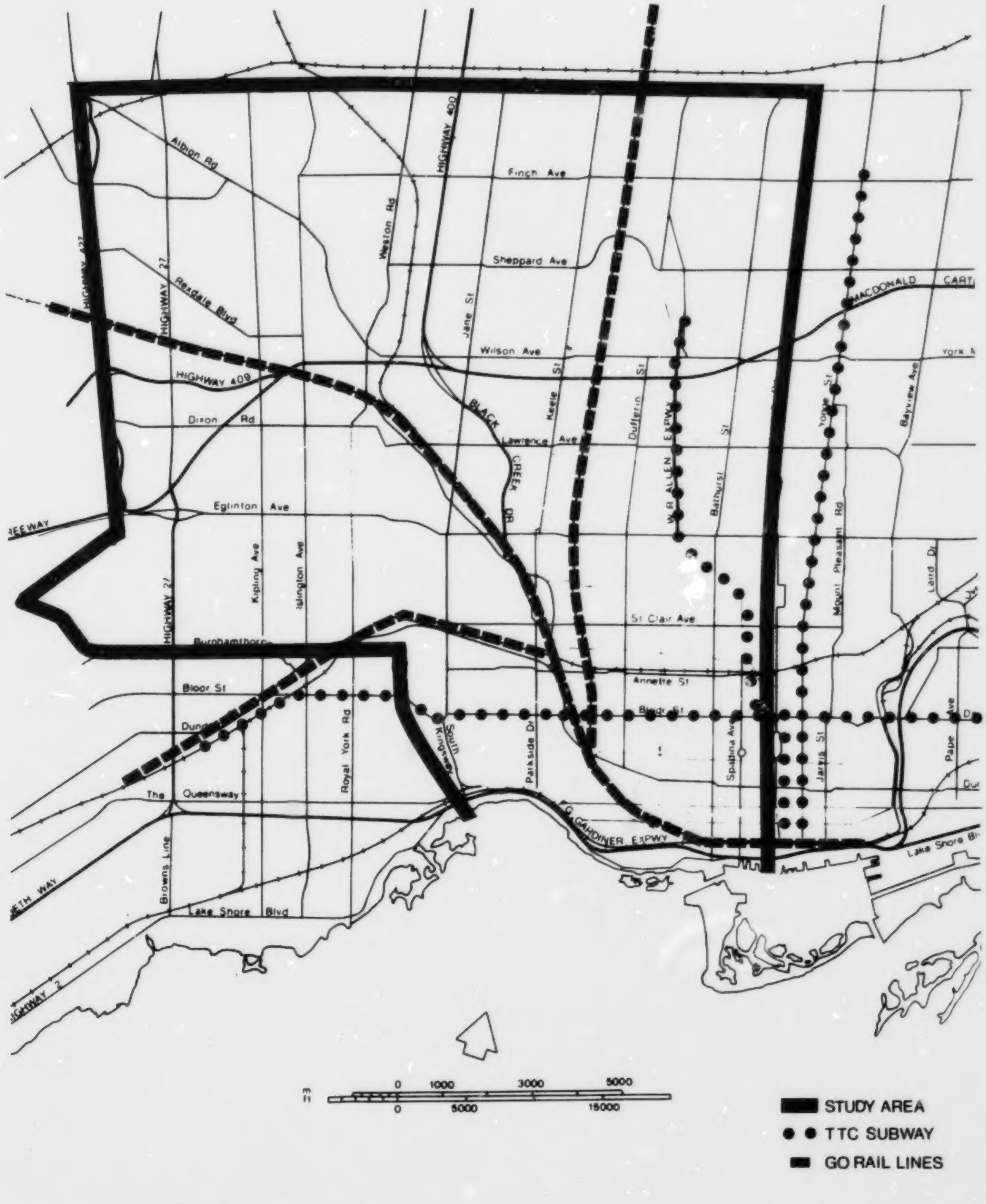

Albion Rd
Finch Ave
Weston Rd
HIGHWAY 400
Sheppard Ave
MACDONALD CARTI
HIGHWAY 27
Rexdale Blvd
HIGHWAY 27
Jane St
Wilson Ave
York M
HIGHWAY 409
Keele St
Dufferin St
Yonge St
Bayview Ave
Dixon Rd
BLACK CREEK DR
Lawrence Ave
W.R. ALLEN EXPWY
Bathurst St
Eglinton Ave
REEWAY
Kipling Ave
Islington Ave
Mount Pleasant Rd
Laird Dr
St Clair Ave
HIGHWAY 27
Burnhamthorpe
Annette St
Bloor St
Bloor St
Dundas
Royal York Rd
South Kingsway
Parkside Dr
Spadina Ave
Jarvis St
Pape Ave
The Queensway
F.G. GARDINER EXPWY
Lake Shore Blvd
Browns Line
ETH WAY
Lake Shore Blvd
HIGHWAY 2
0 1000 3000 5000
0 5000 15000
STUDY AREA
TTC SUBWAY
GO RAIL LINES

EXHIBIT 1: STUDY AREA

Final approval of this amendment by the Ministry of Municipal Affairs is outstanding;

- The Finch Avenue West Environmental and Needs Assessment study, completed in 1985, has been approved by the Environmental Assessment Board and is presently before the Minister of the Environment for final approval to construct a new Finch Avenue link between Islington Avenue and Albion Road; and
- The West Metro Boundary Transportation Review, completed in 1986 reviewed year 2011 forecasts for cross-boundary commuting from the west into Metropolitan Toronto. It concluded that, given limited opportunities for road improvements, future travel demands would require a significant shift to transit usage if demands are to be satisfied. Initiatives such as fare integration and service coordination between the various transit operators and expansion of GO Transit services (both rail and bus) were seen as particularly important in the near future, as well as cross-boundary road improvements wherever possible.

The above studies represent only a small proportion of the total number of individual studies that have been carried out to address transportation issues within the northwest Metro sector. Appendix B (extracted from Working Paper #1 - Literature Search) contains a more complete listing of relevant reports. The studies identified above do however cover a representative range of the types of transportation issues that exist within the study area, i.e. a combination of roadway and transit issues related to travel demand both within and through the northwest Metro sector.

The investigations that have been carried out in recent years have led to a construction program since 1975 that is reflected in Exhibit #2. This includes several roadway widenings; the construction of Black Creek Drive; the extensions of Allen Road and Highway 427; the recent commencement of construction for Highway 407; the construction of the Spadina subway from Bloor Street to Wilson Avenue; the addition of GO Rail service on the Milton and Georgetown lines; and increased service frequency on the Lakeshore West GO Rail line.

The Metropolitan Toronto Roads and Traffic Department has also produced a technical report that addresses the need for specific roadway improvements throughout Metropolitan Toronto. This technical report "Metropolitan Toronto Roads Review Phase 1 - 1983" has not been adopted by Council, but it does provide the Department's view of existing Metro road deficiencies and proposed solutions to these deficiencies. The proposed road improvements as identified in the Metropolitan Toronto Roads Review Phase 1 are shown in Exhibit #3.

The present report provides an investigation, updating and consolidation of the key transportation issues within northwest Metro.

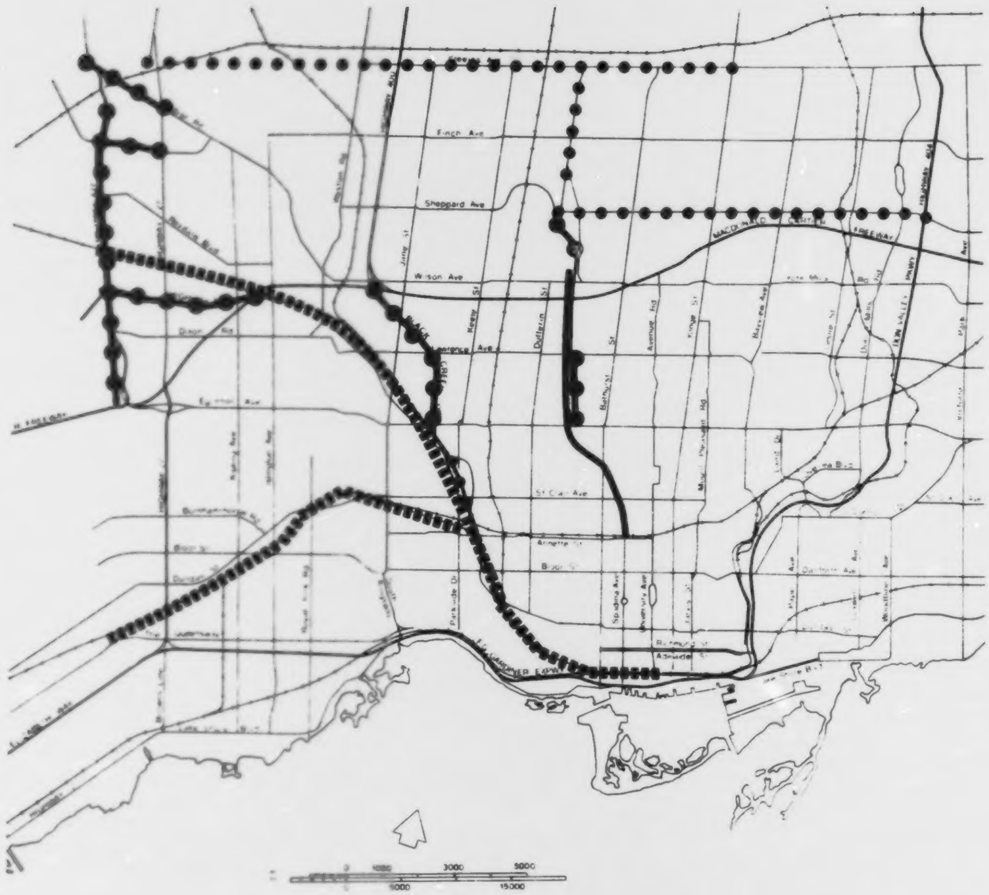
1.3 STUDY ORGANIZATION

The overall direction to the study was provided by the Metropolitan Toronto Technical Transportation Planning Committee, reporting to the Transportation Committee of Metro Council.

The T.T.P.C. was assisted by a Steering Committee that reviewed all technical recommendations at key points prior to review with the T.T.P.C. The Steering Committee was comprised of representatives of the following agencies:

- Metro Toronto Planning;
- Metro Toronto Roads and Traffic;
- Toronto Transit Commission; and
- Ministry of Transportation of Ontario.

The detailed technical analysis and evaluation of data was carried out by the Metro Toronto Planning Department with assistance from a



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Eglinton Ave
St Clair Ave
Annette St
Bloor St
Keele St
Dufferin St
Bathurst St
Avenue Rd
Yonge St
Bayview Ave
Spadina Ave
University Ave
Richmond St
Adelaide St
Parkside Dr
Royal York Rd
Dixon Rd
Dundas St
Jane St
Black Creek
MACDONALD CARTIER FREEWAY
DON VALLEY PKWY
GARDINER EXPWY
0 1000 3000 5000
0 5000 15000

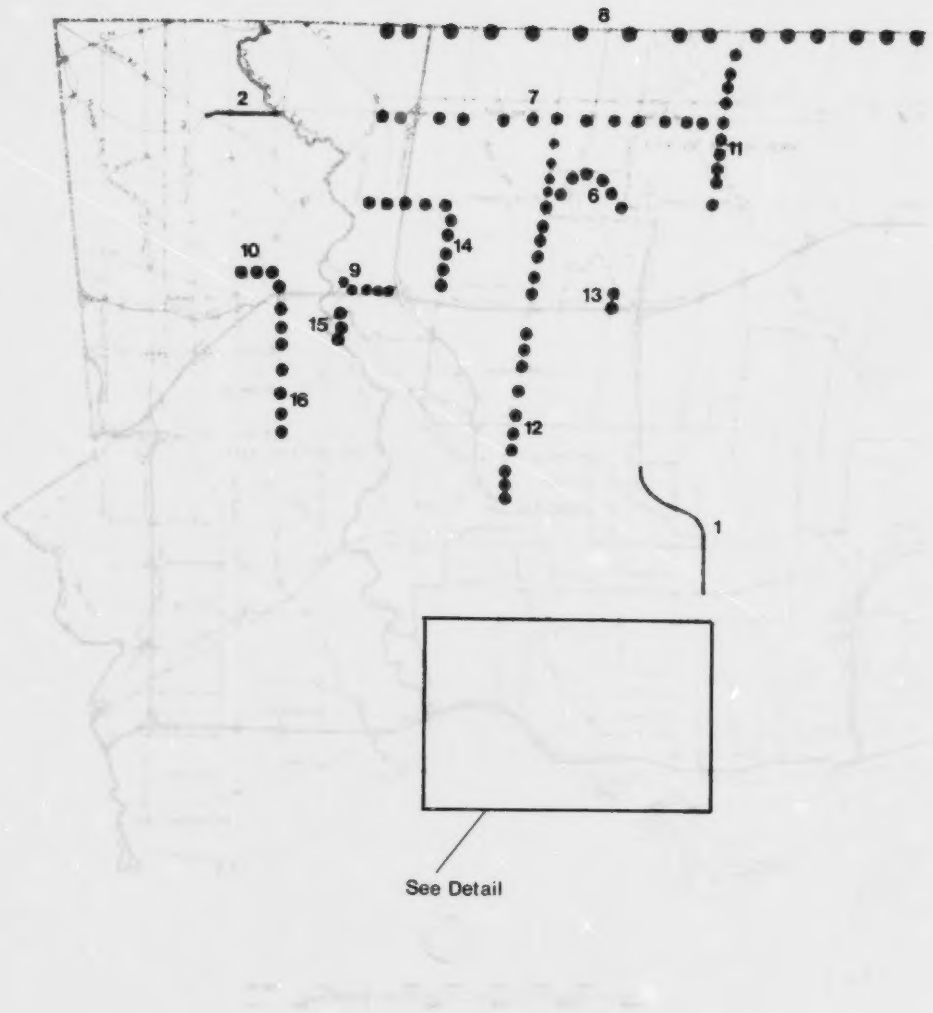
●—●—● New Road Links/Extensions

● ● ● ● Road Widenings

— Subway extension

▪▪▪▪▪▪▪ GO Transit

EXHIBIT 2:
TRANSPORTATION IMPROVEMENTS
SINCE 1971



LEGEND

New Links and Extensions ——

1. Allen Road extension to Davenport Road;
2. Finch Avenue West extension at Islington Avenue;
3. Front Street Extension/Interchange with F.G. Gardiner Expressway;
4. Dufferin Street extension to Lake Shore Boulevard;

Road Widenings ● ● ● ●

5. Gardiner Expressway (Front Street to Humber River);
6. Sheppard Avenue (Weston Road to Jane and Keele to Dufferin);
7. Finch Avenue (Weston Road to Bathurst Street);
8. Steeles Avenue (Weston Road to Bayview Avenue);
9. Wilson Avenue (Weston Road to Highway 400);
10. Rexdale Boulevard (Kipling Avenue to Islington Avenue);
11. Bathurst Street (Sheppard Avenue to Steeles Avenue);
12. Keele Street (Finch Avenue to Rogers Road);
13. Dufferin Street (Wilson Avenue to Highway 401);
14. Jane Street (Sheppard Avenue to Wilson Avenue);
15. Weston Road (Highway 401 to St. Phillips Road);
16. Islington Avenue (Rexdale Boulevard to Eglinton Avenue);

Grade Separation ●

17. Dufferin Street/Queen Street grade separation

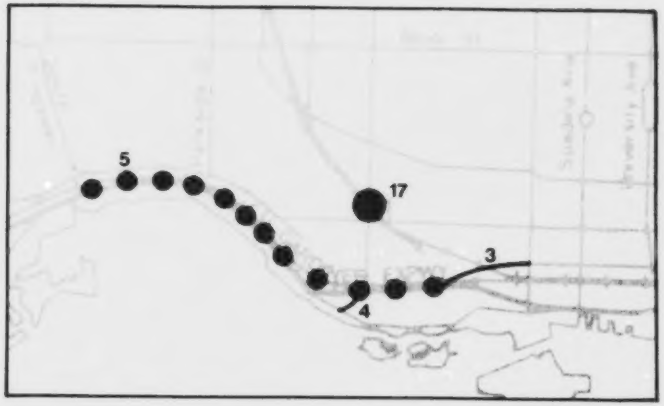


EXHIBIT 3:
ROAD IMPROVEMENTS FOR NORTHWEST METRO AS RECOMMENDED IN THE METROPOLITAN TORONTO ROADS REVIEW PHASE 1

Working Committee that met regularly throughout the course of the study to review, critique and assist in the interpretation of data. A total of 8 full Working Committee and 2 sub-committee meetings were held during the study. The Working Committee was comprised of representatives of the following agencies:

- o Metro Toronto Planning;
- o Metro Toronto Roads and Traffic;
- o Toronto Transit Commission;
- o City of Toronto;
- o City of North York;
- o City of York;
- o City of Etobicoke;
- o Region of York;
- o Town of Vaughan;
- o Region of Peel;
- o City of Mississauga;
- o City of Brampton; and
- o Ministry of Transportation of Ontario.

The Metro Toronto Planning Department also retained the services of McCormick Rankin, Consulting Engineers, to assist in carrying out the study. The appointment of McCormick Rankin in association with Tranplan Associates was adopted by Metro Council at its meeting on June 24 and June 26, 1986.

2.0 STUDY APPROACH

As discussed in Section 1, there have been many studies of individual facilities within the study area over the past several years. In addition, ongoing monitoring and modelling programs for the entire Metro area and beyond have incorporated data for the specific northwest Metro study area. This has included Metro's Cordon Count program; ongoing monitoring of the operation of roadways within Metro by the Metro Roads and Traffic Department; ongoing assessment of population and employment trends and projections for the entire Metro area by the Metro Planning Department; ongoing assessment of transit operating conditions by the TTC; and continued updating of the Metro computer model for predicting future travel demand by the Metro Planning Department.

With this background, coupled with the fact that Metro staff maintains an ongoing dialogue with staff of the area municipalities, it was possible for Metro Planning to prepare terms of reference that addressed the majority of issues and concerns within the northwest Metro study area. This initial identification of issues, as defined within the terms of reference, was then expanded through consultation with the Working Committee. The initial scope of the problems that needed to be addressed as part of the study was developed to represent the consensus of the Working Committee.

Data that would enable the identified issues and concerns to be addressed was then assembled from available sources. Following assembly of the various data, the relevance and applicability to the identified issues and concerns was assessed and interpreted.

A series of working papers was then drafted to address the individual areas of concern. These working papers provided a basis for discussion of issues amongst the members of the Working Committee and the final working papers were only prepared after all Working Committee members had had the opportunity to review and comment on their contents. These final working papers then provided the technical background for the information that is presented in Sections 3, 4 and 5 of this report. The complete set of working papers will be included in a separate technical appendix to this report.

A total of 15 working papers have been prepared. The areas of interest addressed within the working papers are as follows:

- Working Paper #1 provided a summary of the literature search that was carried out as part of the study;
- Working Papers #2 to #5 addressed study area wide matters related to existing and future population, employment and employed labour force data, as well as travel demands throughout the study area; and
- Working Papers #6 to #15 addressed specific issues and problem areas within the study area.

The complete list of working papers is as follows:

#1: Literature Search;
#2: Documentation of Data Collation - Population, Labour Force, Employment and Journey-to-Work Travel Patterns;
#3: Documentation of Data Collation - Cordon Count, Volume/Capacity Analysis, Speed and Accident Data;
#4: Land Use and Travel Demand Forecasts;
#5: Improvements to the Metro Travel Demand Model;
#6: Declining Transit Speeds;
#7: Inter-Regional Travel Issues;
#8: Access into the Central Area;
#9: Effects of Highway 407;

#10: Eglinton Corridor Needs;

#11: Transit Access to Pearson International Airport and York University;

#12: The Need for Rapid Transit Corridors Serving the Northwest;

#13: Road System Discontinuities/Bottlenecks;

#14: Needs of the Goods Movement Industry; and

#15: Support of Development in Northwest Metro.

3.0 EXISTING CONDITIONS

The existing conditions are presented in this chapter from three basic perspectives. These are (1) recent demographic trends, (2) the existing transportation network and (3) existing travel and traffic characteristics.

3.1 RECENT DEMOGRAPHIC TRENDS

The demographic changes within the study area can be best appreciated if they are placed in context within the overall Greater Toronto Area (GTA). Consequently this section addresses trends within (1) the G.T.A., (2) Metro Toronto and (3) the specific study area.

3.1.1 G.T.A. Demographic Trends

Table 3.1 provides a summary of population, employment and employed labour force throughout the GTA for 1971, 1981 and 1985.

From this table it is appropriate to draw attention to the following trends:

- o The population of Metropolitan Toronto increased by only 34,000 between 1971 and 1981. However, the E.L.F. for Metro increased by 252,000 between 1971 and 1981 due primarily to an increase in school leavers joining the workforce and the increasing workforce participation of women;
- o Total employment in Metro increased by 262,000 between 1971 and 1985, i.e. slightly more than the increase in E.L.F. Part-time employment (discussed later) has been increasing at the same rate as full-time employment in recent years;
- o The 666,000 increase in G.T.A. population between 1971 and 1985, has been almost entirely in the regions surrounding Metro. The

TABLE 3.1

DEMOGRAPHIC TRENDS FOR THE G.T.A.

G.T.A. POPULATION

	1971	Increase 1971-81	1981	Increase 1981-85	1985
Peel	184,530	233,695	418,225	147,646	565,871
E. Halton[1]	99,165	39,900	139,155	9,750	148,905
York[4]	141,645	77,490	219,135	70,040	289,175
Pickering/Ajax	43,075	20,165	63,240	16,281	79,521
Metro Toronto	2,104,355	33,941	2,138,296	16,241	2,541,537
TOTAL	2,572,770	405,281	2,978,051	259,958	3,238,009

G.T.A. EMPLOYED LABOUR FORCE[3]

	1971	Increase 1971-81	1981
Peel	110,815	152,600	263,415
E. Halton[1]	41,225	30,615	71,840
York[4]	57,395	56,835	114,230
Pickering/Ajax	16,710	16,230	32,940
Metro Toronto	955,448	252,342	1,207,790
TOTAL	1,181,593	508,622	1,690,215

G.T.A. TOTAL EMPLOYMENT[2]

	1971	Increase 1971-81	1981	Increase 1981-85	1985
Peel	105,000	122,086	227,086		N/Av
E. Halton[1]	39,035	14,120	53,155		N/Av
York[4]	44,025	58,095	102,120	41,633	143,753
Pickering/Ajax	12,200	9,310	21,510		N/Av
Metro Toronto	921,484	137,604	1,059,088	124,430	1,183,518
TOTAL	1,121,744	341,215	1,462,959		

Notes:1. E. Halton refers to Oakville, Halton Hills and Milton only.
2. Regional employment based on census. Metro employment from E.L.A. data link.
3. E.L.F. is only counted in census years, hence 1985 data not available.
4. York Region figures do not include Georgina and East Gwillimbury.

major portion of this growth has been seen in Peel firstly and York secondly; and

- Peel and York Regions in particular, also experienced a significant increase in employment during this period which more-or-less kept pace with their increases in population.

3.1.2 Study Area Demographic Trends

The study area comprises over half of Etobicoke, slightly less than half of North York, all of the City of York and a significant portion of the City of Toronto. The study area boundary does not follow municipal boundaries or planning district boundaries. In order to look more closely at the demographic trends of northwest Metro and make use of the data already aggregated to planning district level, the study area was slightly adjusted for discussion purposes to planning district boundaries while retaining the areas which are either, essentially northwest Metro, or, in the case of P.D.1, have a significant impact on travel throughout the study area. This revised area comprises major planning districts 1, 2, 3, 8, 9 and 10. Exhibit 4 defines the major planning districts referred to in many parts of this report.

Exhibits 5, 6 and 7 map the changes in population and employment between 1971 and 1985 and for the E.L.F. between 1971 and 1981 by major planning district within the study area.

Population

The data at the major planning district (P.D.) level gives a better indication of changes to the demography of Metro as the 'P.D.' boundaries reflect better the different communities as they developed out from the Toronto Central Area over time.

The population in the inner northwest Metropolitan area (P.D.s 2 and 3) experienced a decline between 1971 and 1981 and again a further decline between 1981 and 1985. This area had essentially reached maturity before 1971 as there was no further room for residential development. P.D.s 2 and 3 (essentially York and West Toronto) experienced a decline in population of 87,800 or nearly 18% during the 15 year period. The population of the Toronto Central Area (P.D.1) declined during the 1970's, but increased rapidly by 14,000 during the early 1980's to surpass the 1971 total. South Etobicoke (P.D.7) and some parts of Central Etobicoke (P.D.8) experienced the same steady decline in population as the inner northwest areas. The parts of northern Etobicoke (between Eglinton Avenue and Highway 401 and also north of the Humber River West) and P.D.10 (western North York, north of Highway 401) were not at a mature stage in 1971 and experienced an increase in population during the 1970's, but these areas appear to have peaked in the early 1980's following a pattern set by the older inner metropolitan areas.

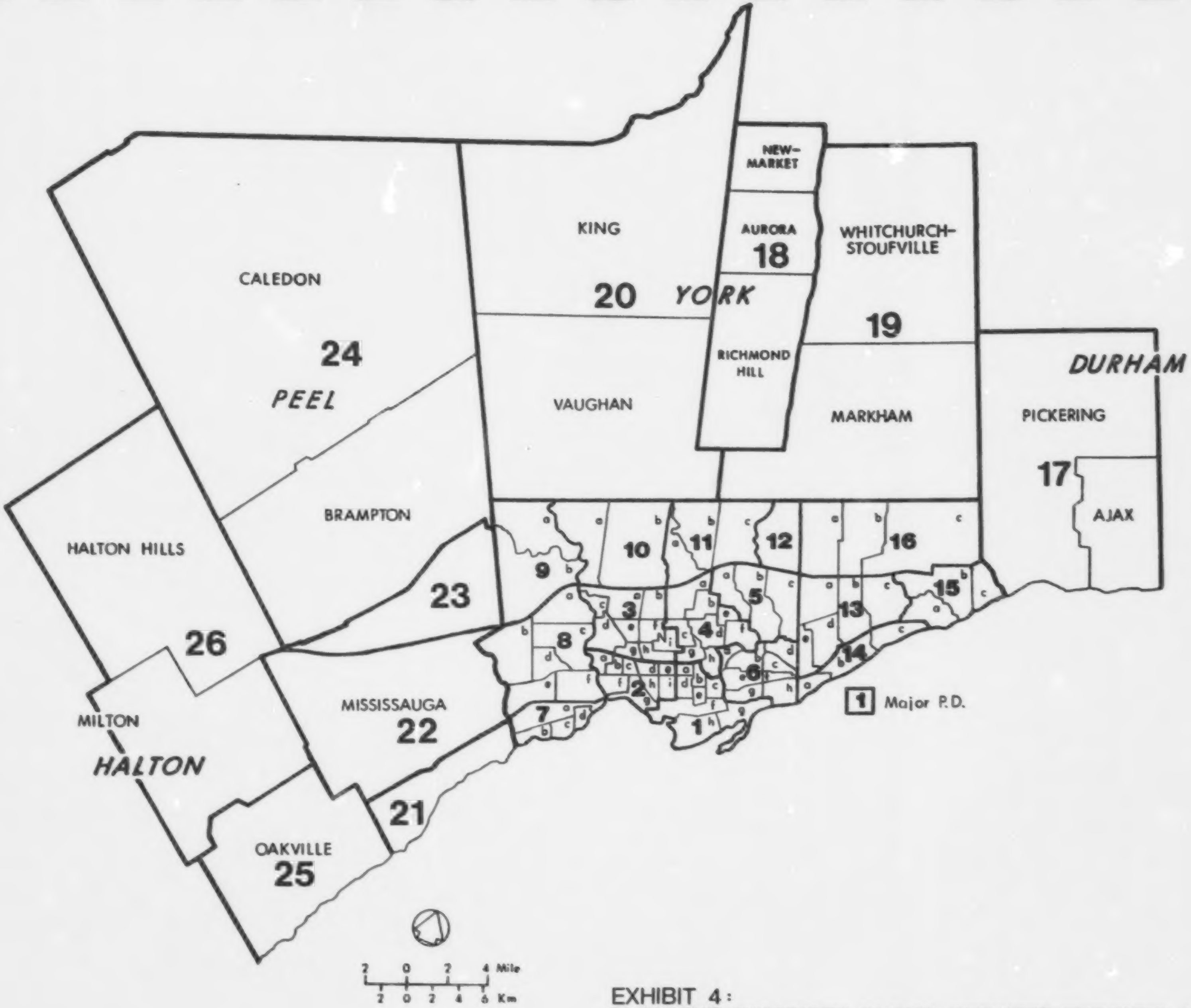
Employed Labour Force (E.L.F.)

Exhibit 5 shows how despite the general decline in population throughout the study area between 1971 and 1981, the E.L.F. increased slightly from anywhere between 10% for P.D.3 and 62% for P.D.9. Only the Toronto Central Area (P.D.1) did not increase in E.L.F. during this period. The E.L.F. for P.D.s 2, 3, 8, 9 and 10 collectively, (essentially the study area) increased by 25% from 366,501 in 1971 to 456,580 in 1981.

Employment

The 1971, 1981 and 1985 full-time employment totals for the study area are shown in Exhibit 7. The summary totals for the six planning districts being considered are given in Table 3.2.

Table 3.2 does not include part-time employment as this particular data was not collected in 1971 and 1981. Part-time employment was generally a stable factor prior to 1981 and was roughly 10% of total employment. In 1985, this factor had increased to between 11% and


NEW-MARKET
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KING
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YORK
WHITCHURCH-STOUFVILLE
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CALEDON
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PEEL
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VAUGHAN
MARKHAM
DURHAM
PICKERING
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AJAX
BRAMPTON
HALTON HILLS
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OAKVILLE
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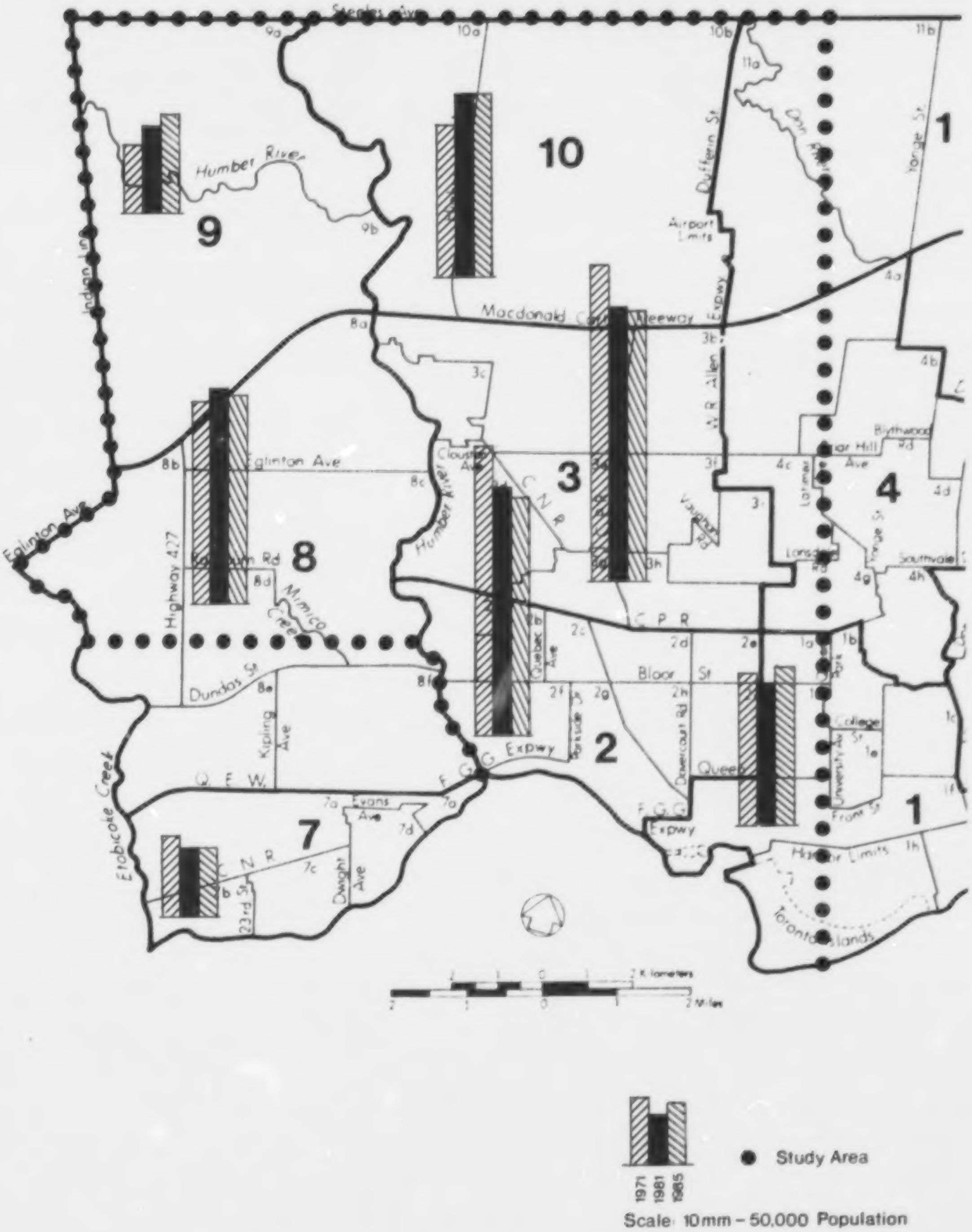
EXHIBIT 4:
PLANNING DISTRICTS IN THE GREATER TORONTO AREA

PREPARED AND DRAWN BY METROPOLITAN TORONTO PLANNING DEPARTMENT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Humber River
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Airport Limits
Indian Line
Macdonald Cartier Freeway
W.R. Allen Expwy
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3b
4a
4b
3c
Blythwood Rd
Eglinton Ave
8b
8c
Clouston Ave
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C N R
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Latimer Ave
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Eglinton Ave
Highway 427
Humber River
Vaughan Rd
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Yonge St
Bathurst Rd
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Mimico Creek
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Southvale
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Bloor St
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Kipling Ave
Parkside Dr
Dovercourt Rd
College St
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University Ave
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Etobicoke Creek
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F. G. G. Expwy
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Queen
7a
Evans Ave
7d
F. G. G. Expwy
Front St
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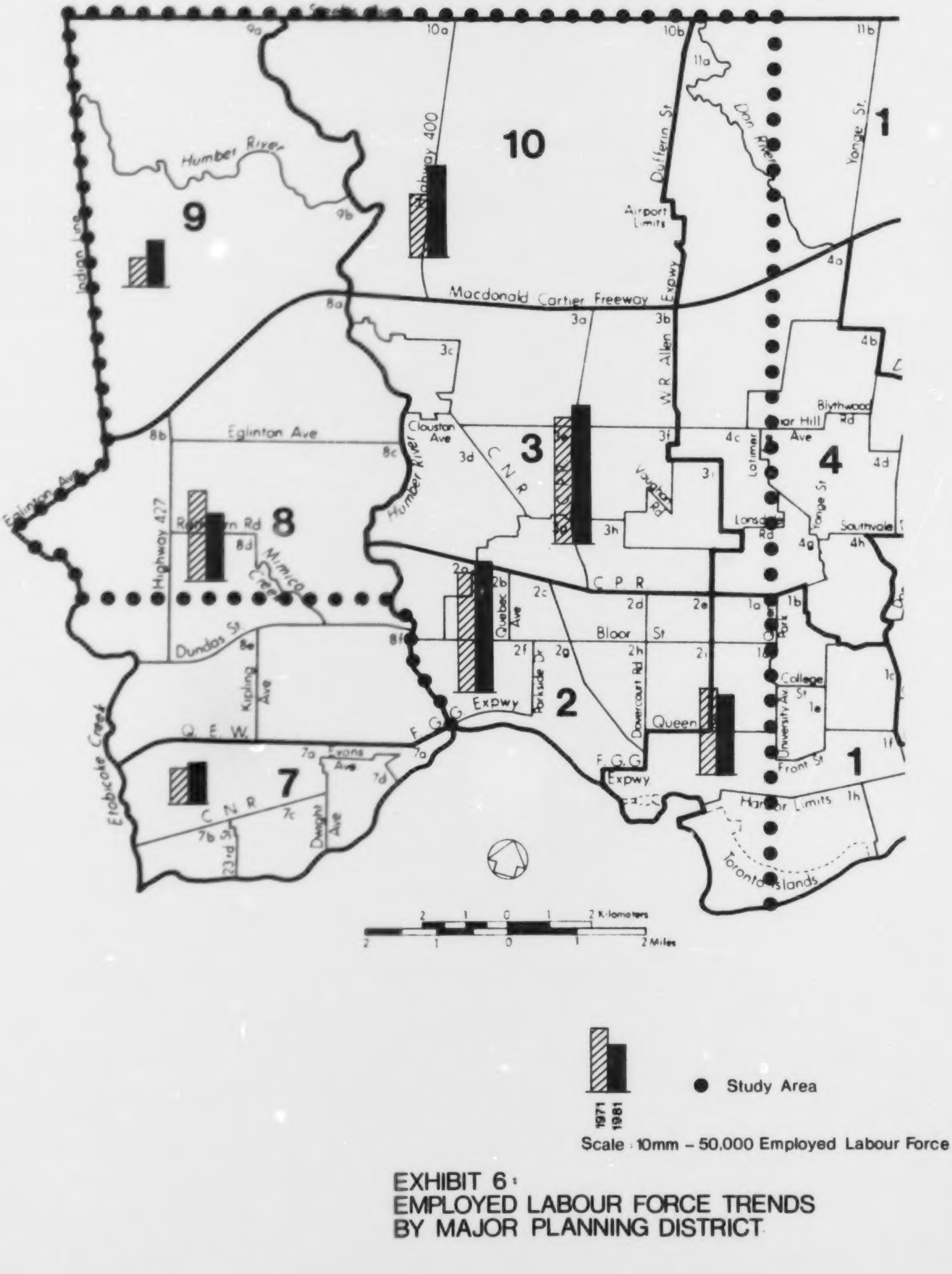
7
C N R
7c
Dwight Ave
23rd St
Harbour Limits
1h
Toronto Islands
Kilometers
Miles
1971
1981
1985
● Study Area
Scale: 10mm – 50,000 Population

EXHIBIT 5:
POPULATION TRENDS BY MAJOR PLANN'NG DISTRICT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Humber River
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Highway 400
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Dufferin St
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Yonge St.
Macdonald Cartier Freeway
W.R. Allen Expwy
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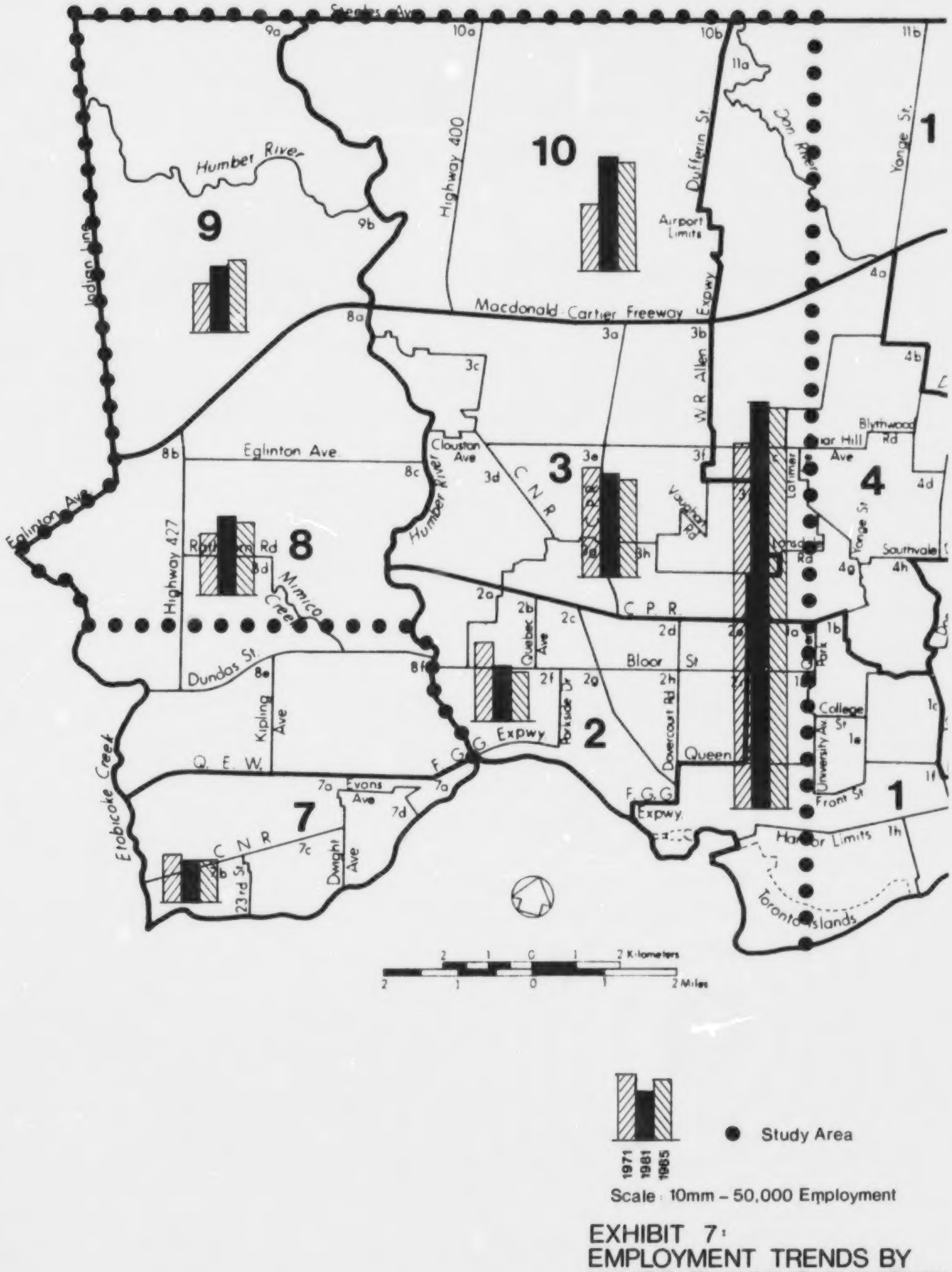
Clouston Ave
C N R
Blythwood Rd
Lawrence Ave
Latimer
Lonsdale Rd
Southvale
Highway 427
Mimico Creek
C P R
Quebec Ave
Bloor St
Dundas St.
Kipling Ave
Parkside Dr
Dovercourt Rd
Queen
University Av
College St
Front St
Harbor Limits
Toronto Islands
Q. E. W.
F. G. G. Expwy
Evans Ave
Etobicoke Creek
23rd St
Dwight Ave
2 Kilometers
2 Miles
1971
1981
● Study Area
Scale : 10mm – 50,000 Employed Labour Force

EXHIBIT 6:
EMPLOYED LABOUR FORCE TRENDS
BY MAJOR PLANNING DISTRICT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Dufferin St.
Don River
Yonge St.
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9b
Indian Line
Airport Limits
4a
Macdonald Cartier Freeway
Expwy
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3a
3b
W.R. Allen
4b
3c
Blythwood Rd
Eglinton Ave.
8b
Clouston Ave
3e
3f
Ave
8c
3d
C N R
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Latimer
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Eglinton Ave
Highway 427
Humber River
Rathburn Rd
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Mimico Creek
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Vaughan Rd
Lonsdale Rd
Yonge St
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Parkside Dr
Dovercourt Rd
Kipling Ave
Queen's Park
College St
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F. G. G. Expwy
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University Av
Etobicoke Creek
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Evans Ave
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7d
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F. G. G. Expwy.
Front St
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C N R
7c
Harbor Limits
1h
7b
23rd St.
Dwight Ave
Toronto Islands
2 1 0 1 2 Kilometers
2 1 0 1 2 Miles
Study Area
1971
1981
1985
Scale: 10mm – 50,000 Employment

EXHIBIT 7:
EMPLOYMENT TRENDS BY
MAJOR PLANNING DISTRICTS

TABLE 3.2

TRENDS IN FULL-TIME EMPLOYMENT

P.D.#	1971	1981	Change 1971-81	1985	Change 1981-85
1.	309,451	335,739	+26,288	333,359	-2,380
2.	62,069	44,486	-17,583	41,152	-3,334
3.	93,005	85,561	-7,444	75,918	-9,643
8.	49,650	60,019	+10,369	57,301	-2,718
9.	37,439	53,134	+15,695	57,330	+4,196
10.	32,473	64,710	+32,237	60,472	-4,238
Total	584,087	643,649	+59,562	625,532	-18,117

TABLE 3.3

RECENT TRENDS IN TOTAL EMPLOYMENT

P.D.#	1983	1985	Change 1983-85	
1.	347,049	371,576	+24,527	(+7%)
2.	46,066	47,730	+1,664	(+4%)
3.	78,849	86,044	+7,195	(+9%)
8.	59,612	66,889	+7,277	(+12%)
9.	60,608	64,262	+3,654	(+6%)
10.	94,684	104,215	+9,531	(+10%)
Total	686,868	740,716	+53,848	(+8%)

16% and appears to be increasing further. The above table shows that P.D.2 and 3, part of the older industrial areas of Metro, appeared to have reached maturity by 1971 and during the 1970's started to lose some of their industry to the developing suburban areas. The other four planning districts all increased employment totals during the 1970's.

The recessionary years of 1982 and 1983 saw a significant drop in employment for all of the Greater Toronto Area and this is reflected in the drop in employment between 1981 and 1985 for five of the six planning districts, with the exception of P.D.9, north Etobicoke. This drop in employment does not show the recovery being made since 1983 in most parts of the study area. This recovery is summarized for total employment in Table 3.3.

Table 3.3 shows the recovery being made since 1983 in the study area with an increase of 53,848 jobs, nearly half of these in P.D.1. Approximately half of the increase in employment in P.D.1 since 1983 has been in the office sector. The office sector now accounts for 50% of the total jobs in P.D.1. However, the trend to more part-time jobs is seen to be less prevalent in the office sector than it is in the other five employment categories, i.e. manufacturing/warehousing, institutional, retail, service and other[1].

The current (1985) employment mix by planning district, type and by total and part time jobs is shown in Table 3.4.

---

[1] 'other' category includes construction, recreation, transportation, etc.

TABLE 3.4

1985 TOTAL AND PART TIME EMPLOYMENT BY TYPE AND PLANNING DISTRICT

Major Planning District		Office	Manufacturing Warehousing	Institutional	Retail	Service	Other	Totals
P.D. 1	P.T.	9,364 (24%)	1,437 (4%)	5,814 (15%)	8,834 (23%)	7,884 (21%)	4,868 (13%)	38,201 (100%)
	Total	220,797 (59%)	31,283 (8%)	42,487 (11%)	31,183 (8%)	34,614 (9%)	11,212 (3%)	371,576 (100%)
	P.T./Total	4.2%	4.6%	13.7%	28.3%	22.8%	43.4%	10.3%
P.D. 2	P.T.	988 (15%)	259 (4%)	794 (12%)	2,690 (41%)	1,437 (22%)	410 (6%)	6,578 (100%)
	Total	11,118 (23%)	11,295 (24%)	7,903 (17%)	9,345 (20%)	7,069 (15%)	1,000 (2%)	47,730 (100%)
	P.T./Total	8.9%	2.3%	10.0%	28.8%	20.3%	41.0%	13.8%
P.D. 3	P.T.	1,434 (14%)	707 (7%)	1,822 (18%)	3,861 (38%)	1,898 (19%)	404 (4%)	10,126 (100%)
	Total	20,155 (23%)	32,988 (38%)	8,714 (10%)	12,751 (15%)	9,433 (11%)	2,003 (2%)	86,044 (100%)
	P.T./Total	7.1%	2.1%	20.9%	30.3%	20.1%	20.2%	11.8%
P.D. 8	P.T.	1,864 (18%)	362 (3%)	1,068 (10%)	4,456 (42%)	2,294 (22%)	444 (4%)	10,488 (100%)
	Total	25,015 (37%)	15,047 (22%)	5,071 (8%)	11,059 (17%)	9,800 (15%)	897 (1%)	66,889 (100%)
	P.T./Total	7.5%	2.4%	21.1%	40.3%	23.4%	49.5%	15.7%
P.D. 9	P.T.	1,015 (15%)	833 (12%)	905 (13%)	1,925 (28%)	1,740 (25%)	514 (7%)	6,932 (100%)
	Total	15,439 (24%)	27,957 (44%)	5,321 (8%)	6,433 (10%)	7,025 (11%)	2,087 (3%)	64,262 (100%)
	P.T./Total	6.6%	3.0%	17.0%	30.0%	24.8%	24.7%	10.8%
P.D. 10	P.T.	1,517 (12%)	1,121 (9%)	5,368 (41%)	2,431 (19%)	2,097 (16%)	438 (3%)	12,972 (100%)
	Total	26,134 (25%)	41,152 (39%)	13,378 (13%)	10,483 (10%)	12,089 (12%)	979 (1%)	104,215 (100%)
	P.T./Total	5.8%	2.7%	40.1%	23.2%	17.3%	44.7%	12.4%
Total of Above	P.T.	16,182 (19%)	4,719 (6%)	15,771 (18%)	24,197 (28%)	17,350 (20%)	7,078 (8%)	85,297 (100%)
	Total	318,658 (43%)	159,722 (22%)	82,874 (11%)	81,254 (11%)	80,030 (11%)	18,178 (2%)	740,716 (100%)
	P.T./Total	5%	3%	19%	30%	22%	39%	12%

NOTE: P.T. = PART TIME

3.2 EXISTING TRANSPORTATION NETWORK

The existing transportation network within the study area has been shaped by a number of factors. The basic concession road grid system that is apparent throughout most of Metro Toronto is less apparent within the study area due to the physical constraint of the Lake at the south and the Humber River valley which runs throughout the study area. In addition highways such as Highway 401 were superimposed on the grid system, after a number of land use constraints had evolved, both within and beyond Metro, that required the Highway to cut diagonally across the grid pattern in certain areas. The existing network was further constrained by the earlier construction of railway lines running radially from central Toronto and once again crossing the basic grid roadway pattern.

The existing transportation network is shown in Exhibit 1. It is characterized by a mix of grid and radial roadways and exhibits a number of "missing links" (e.g. Finch Avenue at the Humber River) and "discontinuities" (e.g. the Allen Road at Eglinton Avenue).

It is anticipated that the existing roadway network will be modified within the next approximately 5 years by the completion of the following "committed" projects:

- widening of Highway 400 (Highway 401 to Highway 7);
- extension of Highway 427 to Highway 7;
- widening of Steeles Avenue West (Yonge St. to Weston Road);
- widening of Bathurst Street (north of Sheppard Ave);
- widening of Gardiner Expressway and extension of Front Street; and
- widening of Sheppard Avenue West (Allen Road to Highway 404).

The existing transit network includes a combination of TTC surface routes (bus and streetcar) and the Bloor and University/Spadina subways skirting the study area to the south and east. All day service is provided on the Lakeshore West GO Rail route and weekday rush hour service on the Milton line (3 trains/day each way), Georgetown line (4 trains), Bradford line (1 train) and Richmond Hill line (3 trains), the latter being just outside the study area. Two extra peak period trains are due to be added to the Milton line this year. Additionally there are cross-boundary surface transit routes, which mainly focus on feeding the subway system. A York Transit Study currently being initiated will include a review of cross-boundary transit requirements for the York/Metro boundary.

3.3 EXISTING TRAVEL/TRAFFIC CHARACTERISTICS

The existing conditions and the recent trends that have been occurring with respect to travel and traffic patterns have been assessed from the viewpoint provided by five sets of information. These are: (1) journey-to-work data (2) cordon count data, (3) volume/capacity analysis, (4) speed and delay surveys, and (5) accident data.

3.3.1 Journey-to-Work Data

Home-to-work trips constitute the major demand for travel in the peak periods and hence demands for capacity on the road and transit systems. It is therefore important to gain an understanding of the trip making patterns of people, either living in Northwest Metro, or destined to or through Northwest Metro, in order to understand the 'nature' of travel demands made on the transportation system.

An assessment was made of the most recently observed origin/destination linkages as contained in the 1971 and 1981 Journey-to-Work Census data. The travel patterns in 1981 were examined as well as the trends between 1971 and 1981. It should be noted that the journey-to-work census survey did not gather data on modal choice. The Metro travel demand model synthesizes modal split and this information is presented and discussed in relation to the home-to-work linkages.

The journey-to-work data was assessed from both the context of the overall GTA and from the context of the individual planning districts within the study area.

General Trends for the G.T.A.

Chapter 3.1 outlined the trends in population and employment growth between 1971 and 1981. The major growth of both population and employment in the regions surrounding Metro, as well as employed labour force and employment within Metro, offered the labour force a greater choice of geographical location to find employment. There was however, an imbalance in labour force and employment growth within certain districts over the decade, particularly in the Yonge Street corridor south of Highway 401, where employment increased by about 90,000, while the residential labour force increased by only 2,000. The imbalance was overcome by substantial commuting from Scarborough (27,000) and Peel and Oakville (26,000) in particular. These trends can be seen by the fact that the mean trip length between home and work in the Greater Toronto Area increased by 24 per cent from 9.7 km in 1971 to 12.0 km in 1981. The mean trip length for the resident labour force in all parts of the northwest study area increased over the decade reflecting the reduced proportions of new home-to-work linkages that found jobs in the same area.

With the larger Metro labour force finding employment further afield, the commuting from the regions into Metro increased at about the same rate as the increase in regional population. Metro residents made up 27,200 (30%) of the Peel work force in 1971. This increased to 58,000 in 1981 although the percentage of the Peel work force reduced to 26%. Similarly, the number of Metro residents working in York Region, increased from 15,000 (37% of York employment) in 1971 to 36,000

(40% of York employment). These Metro-to-York commuters tended to reside in areas of Metro in proximity to York. Similarly the 1981 data shows that 38% of the Metro residents working in Peel were residents of Etobicoke. The estimated peak hour transit modal split into the Toronto Central Area was generally in the 60%-70% range from the rest of Metro and the surrounding regions. The estimated transit modal split for trips internal to Metro (excluding the Central Area) was mostly in a range of between 20% and 50%. For travel between Metro (excluding the Central Area) and the surrounding regions, the transit modal split was between 2% and 10%.

Representative journey-to-work travel desire diagrams are shown in Exhibits 8, 9 and 10 and a brief description for individual planning districts is given in the following section.

Travel Patterns for Individual Planning Districts

Planning District #1 (Central Area)

- P.D.1 resident labour force:
  - in 1971, 70% worked in the C.A.; and
  - in 1981, 66% worked in the C.A.
- P.D.1 employees:
  - in 1971, Metro residents made up 93% (296,000) of the work force; and
  - in 1981, Metro residents made up 86% (342,000) of the work force.
- Resulting increase in average trip length was by 2.5 km (25%) from 10.7 to 13.2 km;
- Transit modal split varied between 63% and 80% depending on origin (see Exhibit 8).

Planning District #2 (western Toronto)

- P.D.2 resident labour force:
  - in 1981, 41% of labour force worked in C.A.; and

  - in 1981, 18% of labour force worked in PD2 (down from 24% in 1971).
- P.D.2 employees:
  - in 1981, 35% employees also lived in PD2 (down from 43% in 1971);
  - in 1971, Metro residents provided 94% of workforce; and
  - in 1981, Metro residents provided 88% of workforce.

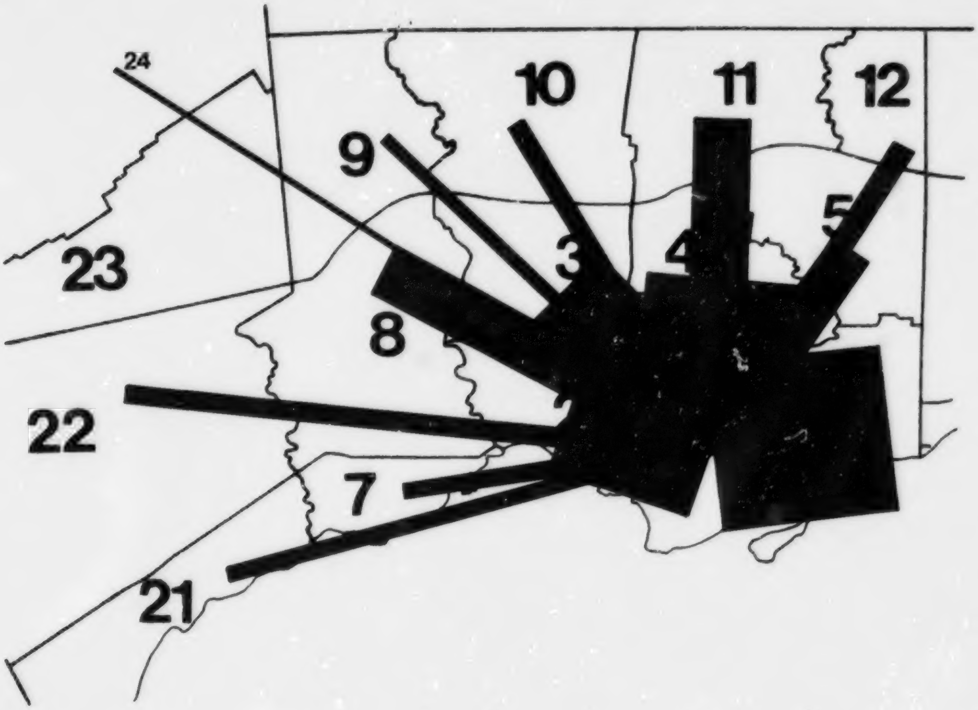
Planning District #3 (mostly, City of York)

- P.D.3 resident labour force:
  - in 1971, 32% worked in PD3;
  - in 1981, 25% worked in PD3;
  - in 1971, 24% worked in the C.A.; and
  - in 1981, 27% worked in the C.A.
- P.D.3 employees:
  - in 1971, 37% originated in PD3 and 96% within Metro generally; and
  - in 1981, 32% originated in PD3 and 87% within Metro generally.
- Main travel desires in inner urban area are generally north-south (see Exhibit 9) with a strong tendency towards localized trip and scattered trip making.

Planning District #8 (central Etobicoke)

- P.D.8 resident labour force:
  - in 1971, 21% worked in C.A. and 42% in Etobicoke;
  - in 1981, 23% worked in C.A. and 35% in Etobicoke; and
  - general trend towards increased trips to Peel Region during this time (7-13% by 1981).
- P.D.8 employees:
  - in 1971, 50% of employees lived in Etobicoke; and
  - in 1981, 45% of employees lived in Etobicoke.
- Peel residents increased their share of Etobicoke jobs from 14% to 25% by 1981.

Total work trips to P.D. 1 - 318,808
Internal work trips P.D. 1 - 40,919 (13 %)


24
10
11
12
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23
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22
7
21

SOURCE: 1971 CENSUS OF CANADA

Total work trips to P.D. 1 - 403,505
Internal work trips P.D. 1 - 43,943 (11 %)

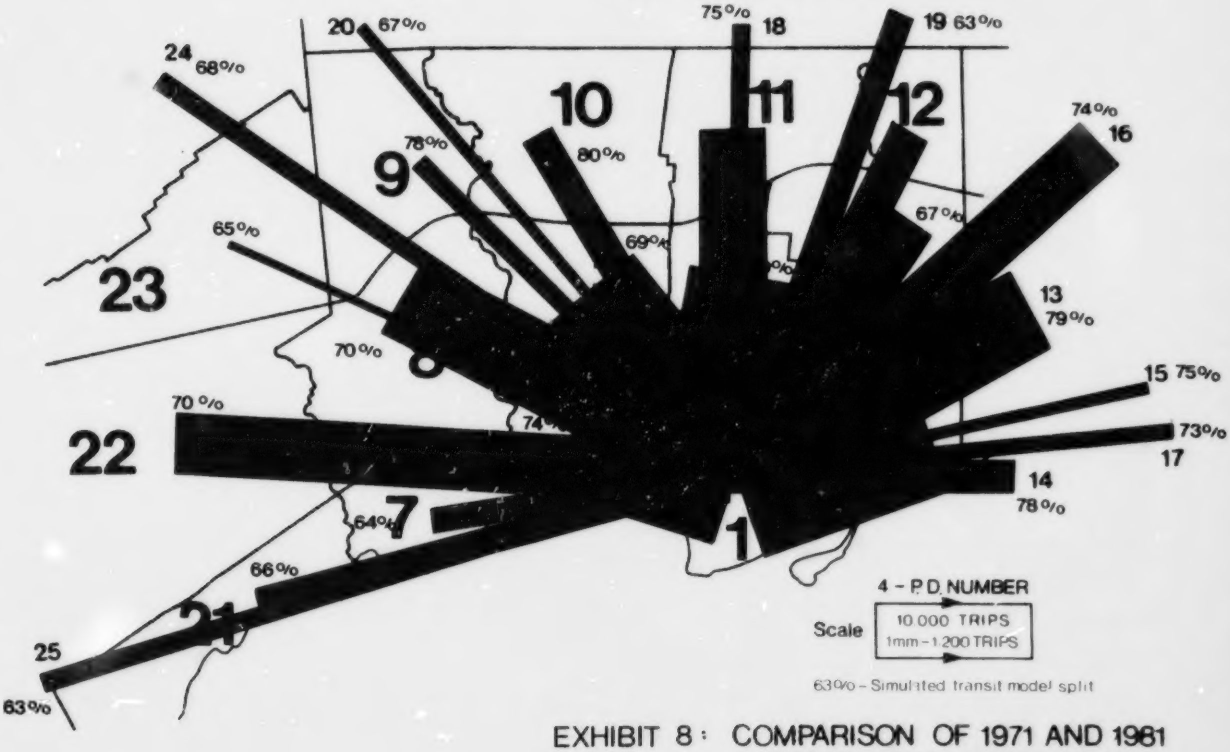
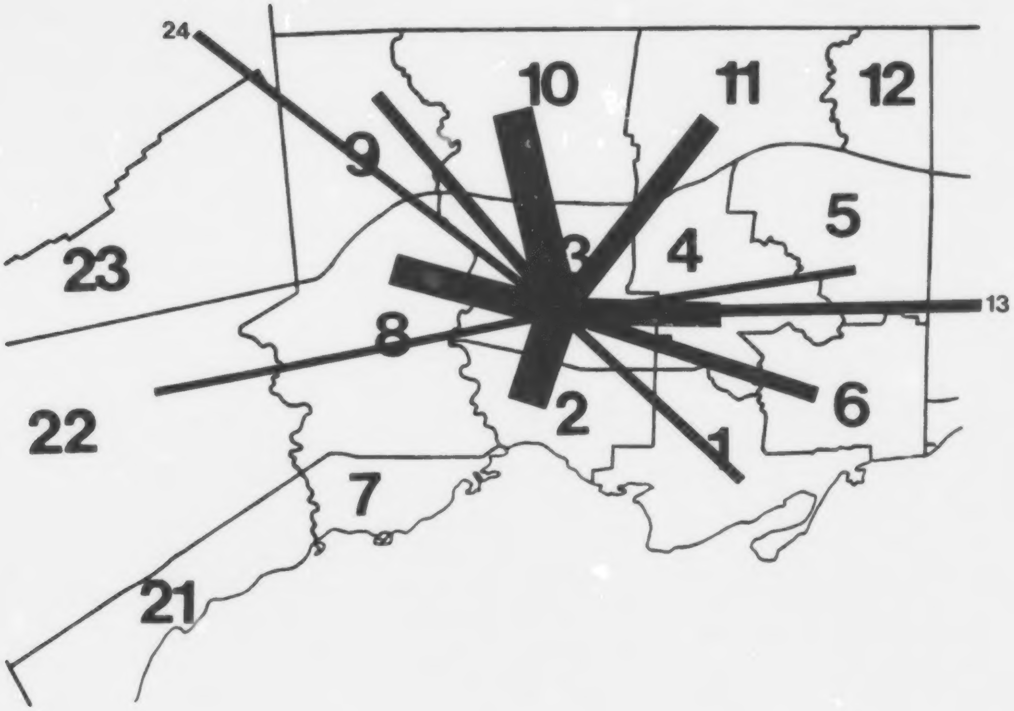

20 67%
75% 18
19 63%
24 68%
10
11
12
74% 16
9 78%
80%
67%
65%
69%
23
13 79%
70%
8
15 75%
70%
74%
73% 17
22
14 78%
64% 7
1
66%
21
25
63%
4 - P.D. NUMBER
Scale
10,000 TRIPS
1mm - 1,200 TRIPS
63% - Simulated transit model split

EXHIBIT 8: COMPARISON OF 1971 AND 1981 24 HOUR WORK TRIPS TO P.D. 1
(All interchanges greater than 1000)
(Includes people working at home)

SOURCE: 1981 CENSUS OF CANADA

Total work trips to P.D. 3 - 96,109
Internal work trips P.D. 3 - 35,199 (37%)


24
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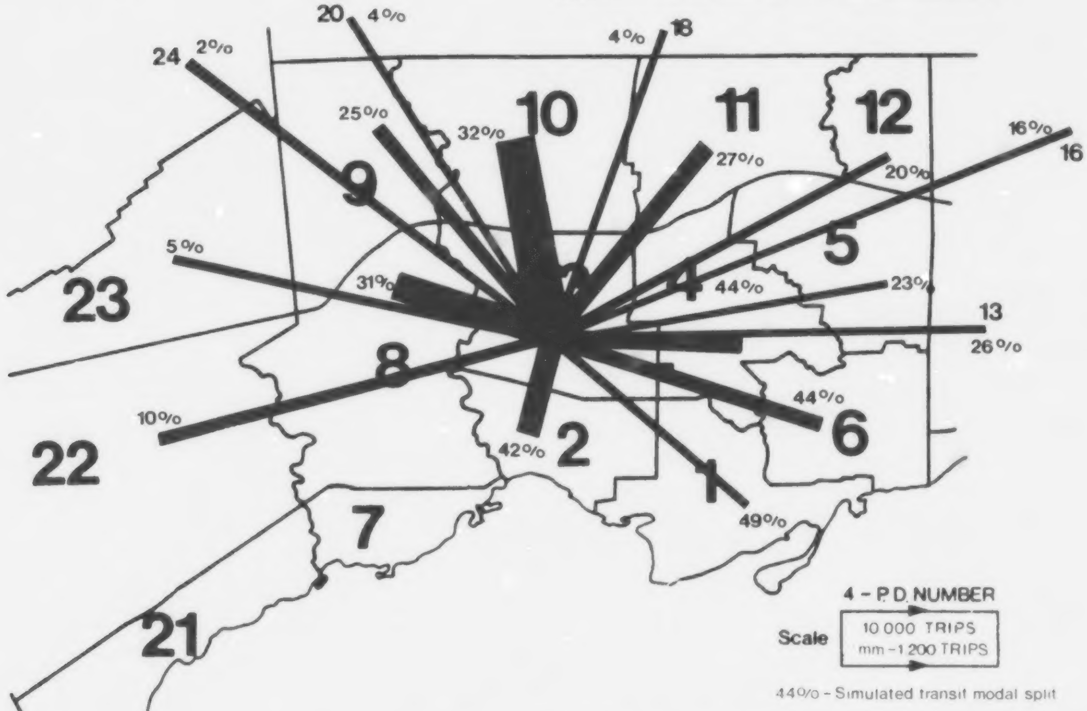
2
6
22
1
7
21

SOURCE: 1971 CENSUS OF CANADA

Total work trips to P.D. 3 - 91,308
Internal work trips P.D 3 - 28,975 (32%)


20
4%
4%
18
24
2%
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32%
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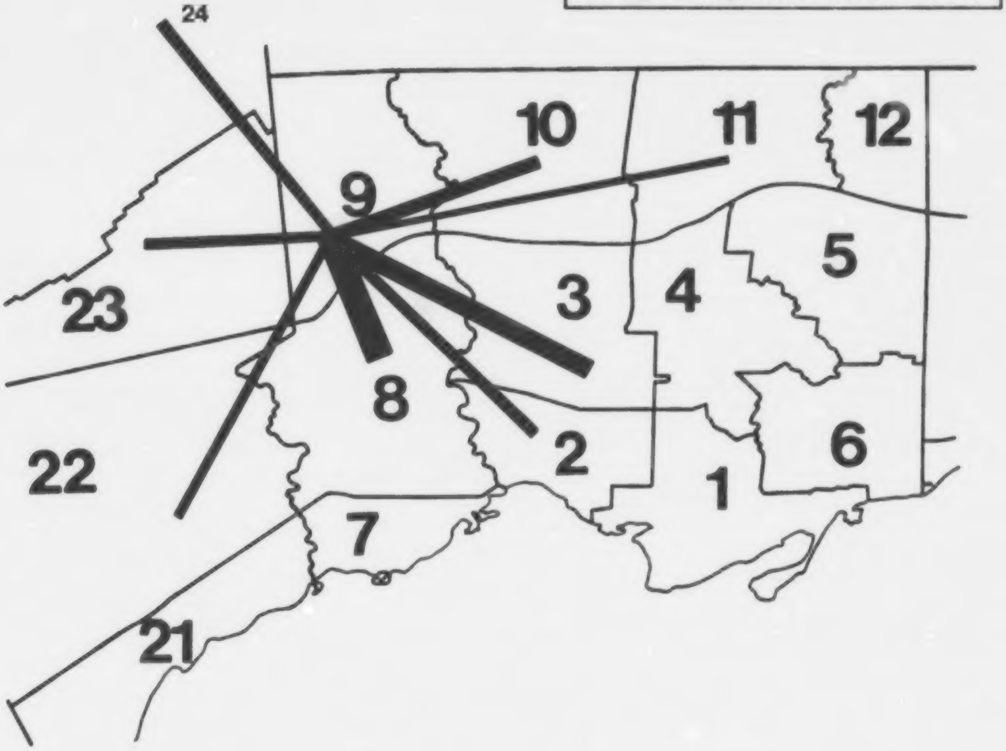
11
12
27%
16%
16
20%
9
5%
5
31%
4
44%
23%
23
13
26%
8
44%
10%
6
42%
2
22
1
49%
7
21
4 - P.D. NUMBER
Scale
10 000 TRIPS
mm - 1,200 TRIPS
44% - Simulated transit modal split

EXHIBIT 9: COMPARISON OF 1971 AND 1981 24 HOUR WORK TRIPS TO P.D. 3
(All interchanges greater than 1000)
(Includes people working at home)

SOURCE: 1981 CENSUS OF CANADA


24
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12
9
5
23
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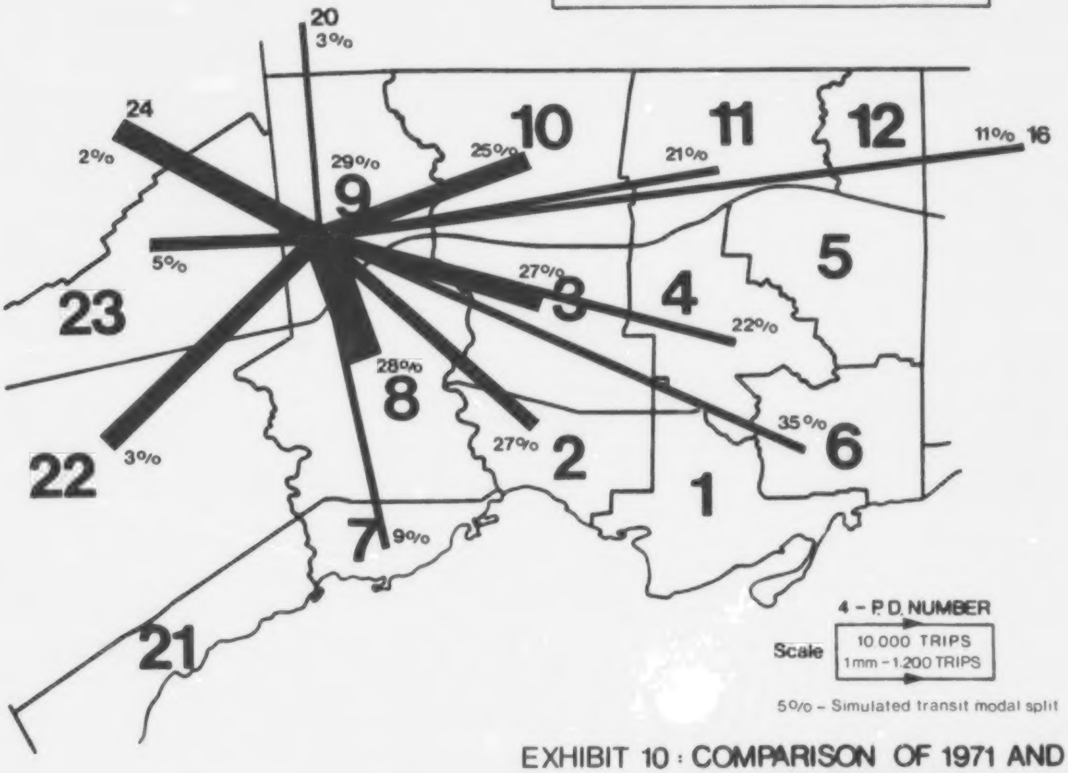
2
6
22
1
7
21

Total work trips to P.D. 9 - 37,948
Internal work trips P.D. 9 - 7,604 (20%)

SOURCE: 1971 CENSUS OF CANADA


20
3%
24
2%
29%
9
25%
10
21%
11
12
11%
16
5%
27%
3
4
22%
5
23
28%
8
35%
6
27%
2
22
3%
1
7
9%
21
4 - P.D. NUMBER
Scale
10,000 TRIPS
1mm - 1,200 TRIPS
5% - Simulated transit modal split

Total work trips to P.D. 9 - 59,643
Internal work trips P.D. 9 - 11,280 (19%)

SOURCE: 1981 CENSUS OF CANADA

EXHIBIT 10 : COMPARISON OF 1971 AND 1981
24 HOUR WORK TRIPS TO P.D. 9
(All interchanges greater than 1000)
(Includes people working at home)

Planning District #9 (northern Etobicoke)

- P.D.9 resident labour force:
  - relatively little dependency on the C.A. for jobs; and
  - mostly localized trip making to Etobicoke, North York, Mississauga and Vaughan, increasingly to jobs outside Metro.
- P.D.9 employees:
  - in 1971, 39% of employees lived in Etobicoke;
  - in 1981, 36% of employees lived in Etobicoke;
  - in 1971, 15% lived in Peel (mostly Brampton); and
  - in 1981, 26% lived in Peel (mostly Brampton).

Planning District #10 (western North York)

- P.D.10 resident labour force:
  - in 1981, 34% worked in PD10 - 14% worked in PD3, and 13% worked in the C.A. (otherwise highly scattered destinations).
- P.D.10 employees:
  - in 1971, 32% lived in PD10;
  - in 1981, 28% lived in PD10;
  - in 1971, 9% lived in the Peel and York region; and
  - in 1981, 18% lived in the Peel and York region.

Peel, York and Halton Regions Residents (only those working in Metro)

- from Oakville:
  - in 1971, 45% destined to the C.A.; and
  - in 1981, 52% destined to the C.A.
- from Mississauga:
  - in 1971, 29% worked in C.A. and 43% in Etobicoke; and
  - in 1981, 32% worked in C.A. and 38% in Etobicoke.
- from Vaughan, Richmond Hill:
  - in 1971, 35% - 45% of trips destined to north Metro; and
  - in 1981, 40% - 51% of trips destined to north Metro.

3.3.2 Cordon Count Data

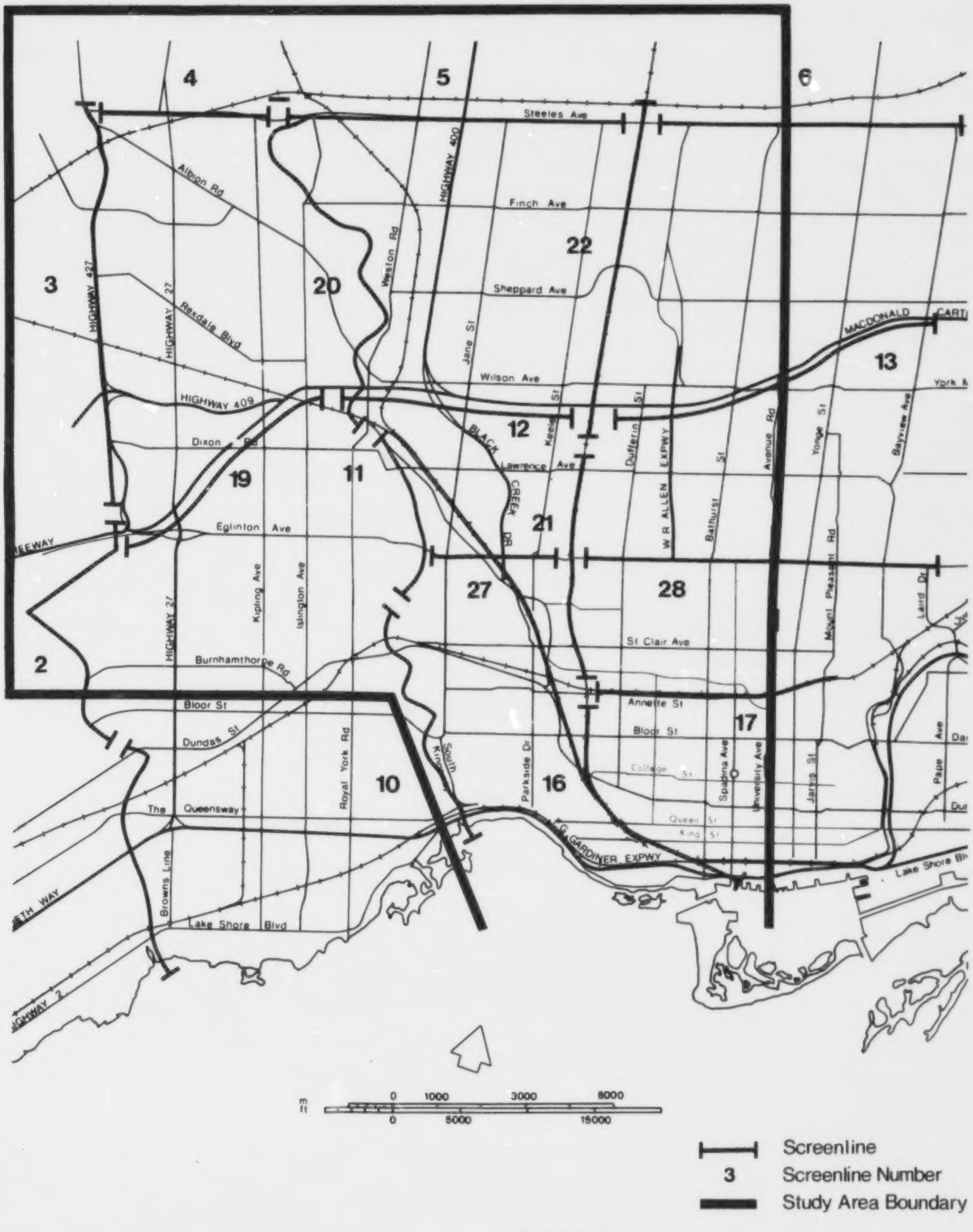
The Metro Cordon Count Program was established in 1975 by the Metropolitan Planning Department and has subsequently been carried out biennially. The count data is collated by screenlines and eighteen of these, wholly or partly, fall within the northwest study area. These eighteen screenlines are illustrated in Exhibit 11. The screenline numbers are those used for the Cordon Count Program and hence the numbering is not sequential. Although not in the study area, screenline #1 at the Peel/Metro boundary between Dundas and Lake Ontario, has been included because of the interaction between the roads crossing screenlines 1 and 2 (Dundas to Highway 401).

The general trends within the study area are discussed in terms of auto, transit and truck traffic.

Auto Traffic

Table 3.5 illustrates the inbound a.m. peak period (7-9 a.m) trends for each of the eighteen screenlines between 1975 and 1985 by direction. It can be seen that the inbound direction (i.e. towards the Toronto Central Area and Yonge Street) is the peak direction for all screenlines with the exception of screenline numbers 3, 12, 19, 20 and 27. These five screenlines are in close proximity, in the Weston/Rexdale area (see Exhibit 11); in other words, the extreme northwest of Metro. However, most of the screenlines in this area do tend to have a balanced inbound/outbound flow (screenlines 3, 20, 22 and 27 in particular). This illustrates clearly the inter-dependency of northwest Metro and the immediate surrounding areas of Peel and York Regions.

Between 1975 and 1985, the screenlines that have experienced the largest increases in auto travel in the a.m. peak period are those at the Metro boundary. The largest percentage increase (110%) was experienced across screenline #6 at the York/Metro boundary (Dufferin to Bayview). Increases across the other Metro boundary screenlines (1


4
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28
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16
Steeles Ave
Albion Rd
Finch Ave
Sheppard Ave
Rexdale Blvd
HIGHWAY 427
HIGHWAY 27
Weston Rd
HIGHWAY 400
Jane St
Wilson Ave
HIGHWAY 409
MACDONALD CARTI
York M
Dixon Rd
BLACK CREEK DR
Keele St
Dufferin St
W R ALLEN EXPWY
Lawrence Ave
Bathurst St
Avenue Rd
Yonge St
Bayview Ave
Eglinton Ave
EEWAY
Kipling Ave
Islington Ave
Mount Pleasant Rd
Laird Dr
St Clair Ave
Burnhamthorpe Rd
Bloor St
Annette St
Dundas St
Bloor St
Royal York Rd
South Kingsway
Parkside Dr
College St
Spadina Ave
University Ave
Jarvis St
Pape Ave
Da
The Queensway
Queen St
King St
Du
F G GARDINER EXPWY
Lake Shore Blvd
Browns Line
ETH WAY
Lake Shore Blvd
HIGHWAY 2
0
1000
3000
5000
0
5000
15000
Screenline
3 Screenline Number
Study Area Boundary

EXHIBIT 11:
LOCATION OF SCREENLINES IN STUDY AREA

TABLE 3.5

INBOUND A.M. PEAK PERIOD SCREENLINE

AUTO/TAXI VOLUMES

SCREENLINE AND	NO.[1]	A.M. PEAK (7:00-9:00 A.M.) 1975	1985	INCREASE 1975-1985	% INCREASE	PEAK[2] DIRECTION	COMMENTS
Peel/Metro Bdy. (South)	1	17,134	23,643	6,509	(38%)	Inbound	1981 Count - 24,308
Peel/Metro Bdy. (Central)	2	10,004	20,089	10,085	(101%)	Inbound	1983 Count - 21,214
Peel Metro Bdy. (North)	3	7,140	13,396	6,256	(88%)	Outbound	
York/Metro Bdy. (West)	4	2,918	5,137	2,156	(72%)	Inbound	
York/Metro Bdy. (W.Central)	5	7,045	13,232	6,187	(88%)	Inbound	
York/Metro Bdy. (Central)	6	5,826	12,231	6,405	(110%)	Inbound	
Humber River (South)	10	19,327	21,328	2,001	(10%)	Inbound	
Humber River (Central)	11	7,120	8,375	1,255	(18%)	Inbound	
Highway 401 (W. Central)	12	8,310	10,505	2,195	(26%)	Outbound	
Highway 401 (Central)	13	20,748	24,141	3,393	(16%)	Inbound	1983 Count - 25,388
Newmarket S/D. (South)	16	21,576	25,527	3,951	(18%)	Inbound	
North Toronto S/D. (Central)	17	17,656	18,697	1,041	(6%)	Inbound	
Highway 401 (West)	19	16,508	20,928	4,420	(27%)	Outbound	1979 Count - 21,399
Humber River (North)	20	16,629	22,482	5,853	(35%)	Outbound	1983 Count - 24,115
Newmarket S/D.(Central)	21	7,338	8,551	1,213	(17%)	Inbound	1983 Count - 8,798
Newmarket S/D. (Nórth)	22	18,150	26,203	8,053	(44%)	Inbound	1981 Count - 26,749
Eglinton (W. Central)	27	4,726	5,558	832	(18%)	Outbound	
Eglinton (Central)	28	23,138	25,439	2,301	(10%)	Inbound	

Notes: 1. Refer to Exhibit 11 for location of screenlines

2. Inbound direction is towards Yonge Street and the Toronto Central Area.

through 5) vary between 72% and 101% during the same period for the inbound direction. The exception to these large increases is for screenline 1 at the Peel/Metro boundary (Dundas to the Lake), where the traffic volume increased by only 38%. This was undoubtedly due to the screenline being closer to capacity in 1975.

The large increase in inbound commuting across the Peel/Metro boundary does not manifest into large increases across the screenlines further into Metro. At the Humber River, south of Highway 401, a.m. peak period autos increased by only 3,255 (12%) as compared to 16,594 (61%) at the Metro boundary. When considering that some of the increase at the Humber River would be due to an increase in the Etobicoke employed labour force during this time, it would appear that a major portion of the increase in commuting from Peel was to destinations west of the Humber River. Moving eastwards from the Humber River screenline, the C.N. Rail Newmarket Subdivision (screenline numbers 16, 21 and 22) showed a slightly greater increase than at the Humber River. South of Highway 401, auto traffic increased by 5,164 or 18% .

Examination of inbound commuting from the west across the Metro boundary, Humber River and C.N. Newmarket screenlines north of Highway 401, shows a slightly different picture. The increases across these three screenlines were 6,256 (88%), 5,853 (35%) and 8, 053 (44%) respectively, illustrating similar increases at the Humber and C.N. Newmarket screenlines as compared to the same screenlines south of Highway 401. These increases are almost certainly due to the increase in employment over this period in north Etobicoke, North York and Vaughan.

The increase in a.m. peak period outbound auto travel is shown in Table 3.6. The Table indicates a similar pattern to the inbound direction in that the major increases in outbound travel were at the Metro boundary

TABLE 3.6

OUTBOUND A.M. PEAK PERIOD SCREENLINE

AUTO/TAXI VOLUMES

SCREENLINE AND	NO.[1]	A.M. PEAK (7:00-9:00 A.M.) 1975	1985	INCREASE 1975-1985	% INCREASE	PEAK[2] DIRECTION	COMMENTS
Peel/Metro Bdy. (South)	1	9,733	10,321	588	(6%)	Inbound	1979 Count - 10,541
Peel/Metro Bdy. (Central)	2	7,241	13,519	6,278	(87%)	Inbound	
Peel Metro Bdy. (North)	3	8,356	14,064	5,708	(68%)	Outbound	
York/Metro Bdy. (West)	4	847	1,610	763	(90%)	Inbound	
York/Metro Bdy. (W.Central)	5	5,171	8,189	3,018	(58%)	Inbound	
York/Metro Bdy. (Central)	6	3,920	5,609	1,689	(43%)	Inbound	
Humber River (South)	10	11,247	13,901	2,654	(24%)	Inbound	
Humber River (Central)	11	4,393	4,665	272	(6%)	Inbound	1981 Count - 4,693
Highway 401 (W. Central)	12	9,511	13,276	3,765	(40%)	Outbound	
Highway 401 (Central)	13	13,675	18,990	5,315	(39%)	Inbound	1981 Count - 19,417
Newmarket S/D. (South)	16	12,868	14,189	1,321	(10%)	Inbound	
North Toronto S/D. (Central)	17	8,109	9,392	1,283	(16%)	Inbound	
Highway 401 (West)	19	22,367	28,978	6,611	(30%)	Outbound	
Humber River (North)	20	17,801	24,565	6,764	(38%)	Outbound	
Newmarket S/D.(Central)	21	6,363	5,735	-628	(-10%)	Inbound	
Newmarket S/D. (North)	22	19,768	25,731	5,963	(30%)	Inbound	1981 Count - 26,413
Eglinton (W. Central)	27	4,153	5,611	1,458	(35%)	Outbound	
Eglinton (Central)	28	12,760	15,415	2,655	(21%)	Inbound	

Notes: 1. Refer to Exhibit 11 for location of screenlines

2. Inbound direction is towards Yonge Street and the Toronto Central Area.

with increases of between 43% and 90%. The exception again is screenline 1 where only a 6% increase was observed. This was likely due to a more modest increase in employment in south Mississauga as compared with central and north Mississauga. Significant increases in outbound travel could be observed at screenlines 12 (40%), 13 (39%), 20 (38%) followed by 27 (35%) and 22 (30%). The traffic growth across these screenlines, which are essentially in the western part of North York, are a further indication of the employment growth in this area of Metro as well as Mississauga and Vaughan.

Trends in auto volumes between 1975 and 1985 for the 12 hour period, 7:00 a.m. to 7:00 p.m. were also reviewed. These trends are similar to the peak period trends and are not discussed further.

Transit

GO Transit and municipal transit ridership has been reviewed separately in order to better understand trends between 1975 and 1985.

The increase in GO Train ridership, crossing the Metro boundary during this ten year period, is summarized in Table 3.7. Overall the number of GO Train passengers crossing the Peel/Metro boundary increased by 7,002 (129%). The Bradford GO Train is the only service from York Region that traverses the study area and is currently only a nominal 1 train each way per day service.

Tables 3.8 and 3.9 illustrate the inbound and outbound a.m. peak period transit ridership (excluding GO Rail) for 1975 and 1985. The overall growth rates for transit ridership are similar to that for auto volumes. However, there is a greater diversity in growth rates among the screenlines for transit ridership when compared with auto trends. Table 3.8 shows growth rates for inbound transit ridership of anywhere between -57% (screenline 27) to +376% (screenline 3). The largest increase in inbound ridership can be seen at screenlines 17 (9,631 or

TABLE 3.7

GO TRAIN RIDERSHIP

CROSSING METRO BOUNDARY

(7:00 - 9:00 a.m. INBOUND)

Service	1975	1985	Increase 1975 - 1985	
Lakeshore West	4,224	7,998	3,774	(89%)
Milton	*	2,639	2,639	(-)
Georgetown	1,205	1,794	589	(49%)
Bradford	*	371	371	(-)
Total	5,429	12,802	7,373	(136%)

* not in service in 1975.

TABLE 3.8

INBOUND A.M. PEAK PERIOD SCREENLINE TRANSIT RIDERSHIP (EXCLUDING GO RAIL)

SCREENLINE AND	NO.[1]	A.M. PEAK (7:00-9:00 A.M.) 1975	1985	INCREASE 1975-1985	% INCREASE	PEAK[2] DIRECTION	COMMENTS
Peel/Metro Bdy. (South)	1	1,778	2,741	963	(54%)	Inbound	
Peel/Metro Bdy. (Central)	2	663	2,631	1,968	(297%)	Inbound	1981 Count - 3,124
Peel Metro Bdy. (North)	3	383	1,825	1,442	(376%)	Inbound	
York/Metro Bdy. (West)	4	43	29	-14	(-48%)	Outbound	
York/Metro Bdy. (W.Central)	5	638	1,189	551	(86%)	Outbound	
York/Metro Bdy. (Central)	6	1,301	4,039	2,738	(210%)	Inbound	
Humber River (South)	10	17,101	20,368	3,267	(19%)	Inbound	
Humber River (Central)	11	1,619	1,909	290	(18%)	Inbound	
Highway 401 (W. Central)	12	2,415	3,530	1,115	(46%)	Inbound	
Highway 401 (Central)	13	19,282	36,267	16,985	(88%)	Inbound	
Newmarket S/D. (South)	16	33,251	34,775	1,524	(5%)	Inbound	
North Toronto S/D. (Central)	17	45,345	54,976	9,631	(21%)	Inbound	
Highway 401 (West)	19	2,218	3,883	1,665	(75%)	Inbound	1981 Count - 58,917
Humber River (North)	20	1,376	3,081	1,705	(124%)	Inbound	
Newmarket S/D.(Central)	21	5,713	6,658	945	(17%)	Inbound	1983 Count - 4,019
Newmarket S/D. (North)	22	3,667	10,822	7,155	(195%)	Inbound	1983 Count - 7,236
Eglinton (W. Central)	27	4,894	3,109	-1,785	(-57%)	Inbound	
Eglinton (Central)	28	32,731	46,419	13,688	(42%)	Inbound	

Notes: 1. Refer to Exhibit 11 for location of screenlines

2. Inbound direction is towards Yonge Street and the Toronto Central Area.

TABLE 3.9

OUTBOUND A.M. PEAK PERIOD SCREENLINE

TRANSIT RIDERSHIP (EXCLUDING GO RAIL)

SCREENLINE AND	NO.[1]	A.M. PEAK (7:00-9:00 A.M.) 1975	1985	INCREASE 1975-1985	% INCREASE	PEAK[2] DIRECTION	COMMENTS
Peel/Metro Bdy. (South)	1	1,143	1,623	480	(42%)	Inbound	
Peel/Metro Bdy. (Central)	2	219	980	761	(347%)	Inbound	
Peel Metro Bdy. (North)	3	707	1,713	1,006	(142%)	Inbound	
York/Metro Bdy. (West)	4	12	22	10	(83%)	Outbound	1983 Count - 110
York/Metro Bdy. (W.Central)	5	969	1,525	556	(57%)	Outbound	
York/Metro Bdy. (Central)	6	587	1,134	547	(93%)	Inbound	1983 Count - 1,968
Humber River (South)	10	6,699	6,588	-111	(-2%)	Inbound	
Humber River (Central)	11	950	1,313	363	(38%)	Inbound	1983 Count - 1,573
Highway 401 (W. Central)	12	2,765	2,981	216	(8%)	Inbound	
Highway 401 (Central)	13	5,437	12,931	7,494	(138%)	Inbound	
Newmarket S/D. (South)	16	13,527	11,248	-2,279	(-20%)	Inbound	
North Toronto S/D. (Central)	17	22,060	24,100	2,040	(9%)	Inbound	1981 Count - 25,828
Highway 401 (West)	19	3,152	4,112	960	(30%)	Inbound	1983 Count - 4,506
Humber River (North)	20	1,127	1,857	730	(65%)	Inbound	1983 Count - 3,082
Newmarket S/D.(Central)	21	3,966	3,033	-933	(-31%)	Inbound	1983 Count - 3,818
Newmarket S/D. (North)	22	2,518	6,015	3,497	(139%)	Inbound	
Eglinton (W. Central)	27	4,027	2,650	-1,377	(-52%)	Inbound	1983 Count - 2,878
Eglinton (Central)	28	11,385	14,601	3,216	(28%)	Inbound	

Notes: 1. Refer to Exhibit 11 for location of screenlines

2. Inbound direction is towards Yonge Street and the Toronto Central Area.

21%), 28 (13,688 or 42%) and 13 (16,985 or 88%), i.e. southbound from the north into the Central Area. Smaller growth in passenger volumes, but the highest in percentage terms can be observed at the Peel/Metro boundary, i.e. 1,968 passengers (297%) at screenline 2 and 1,442 (376%) at screenline 3. Smaller, but still significant growth in transit ridership can be seen across the York/Metro boundary, particularly screenline 6 (2,738 or 210%).

In the outbound direction, ridership declined across screenlines 10, 16, 21 and 27. The grouping of these four screenlines in the west Toronto/York area would reflect the declining employed labour force in this area of Metro during this period, and possibly a greater reliance on autos for increased commuting into Peel replacing the previous, more localized transit trip. Increases in transit ridership in the outbound direction were not as large as for the inbound direction. The largest increases were at screenlines 13 (7,494 or 138%), 22 (3,497 or 139%) and 28 (3,216 or 28%). These three screenlines, in the outbound direction are essentially serving North York and its City Centre in particular. The largest percentage increase for the outbound direction was again at the Metro boundary, particularly the Peel/Metro boundary, e.g. screenline 2 (761 or 347%) and screenline 3 (1,006 or 142%).

Modal Split

Tables 3.10 and 3.11 document how these previously discussed auto volumes and transit ridership trends translate into changes in transit modal split over this time. For the inbound direction, the only significant decrease in transit modal split can be seen across screenline 27 (-6%) which was no doubt due to the addition of Black Creek Drive in 1982. Screenline 4 had a 0% transit modal split in 1985. Screenlines 5 and 21 showed no change in modal split over the 10 year period. All other screenlines in the study area experienced an increase in transit modal split of up to 13%. The largest shifts in transit modal split were screenlines 13 (13%), 22 (12%) and 1 (10%).

TABLE 3.10

SCREENLINE TOTAL PERSONS AND TRANSIT MODAL SPLIT

1975 and 1985

(7:00 - 9:00 A.M. INBOUND)

SCREENLINE	NO.	Total Persons (Transit Modal Split)				Change	
		1975		1985		1975 - 1985	
Peel/Metro Bdy. (South)	1	27,072	(22%)	41,674	(32%)	+14,602	(+10%)
Peel/Metro Bdy. (Central)	2	12,900	(5%)	26,543	(10%)	+13,643	(+5%)
Peel Metro Bdy. (North)	3	10,431	(15%)	19,725	(18%)	+9,294	(+3%)
York/Metro Bdy. (West)	4	3,743	(1%)	6,264	(0%)	+2,521	(-1%)
York/Metro Bdy. (W.Central)	5	9,150	(7%)	16,875	(7%)	+7,725	(0%)
York/Metro Bdy. (Central)	6	9,012	(14%)	20,333	(20%)	+11,310	(+6%)
Humber River (South)	10	46,612	(47%)	58,027	(54%)	+11,415	(+7%)
Humber River (Central)	11	11,930	(25%)	14,358	(31%)	+2,428	(+6%)
Highway 401 (W. Central)	12	12,768	(19%)	16,588	(21%)	+3,820	(+2%)
Highway 401 (Central)	13	45,763	(42%)	66,158	(55%)	+20,395	(+13%)
Newmarket S/D. (South)	16	67,202	(58%)	80,900	(60%)	+13,698	(+2%)
North Toronto S/D. (Central)	17	68,668	(66%)	78,770	(70%)	+10,102	(+4%)
Highway 401 (West)	19	22,997	(15%)	30,210	(21%)	+7,213	(+6%)
Humber River (North)	20	20,654	(7%)	29,343	(10%)	+8,689	(+3%)
Newmarket S/D.(Central)	21	15,293	(37%)	17,792	(37%)	+2,499	(0%)
Newmarket S/D. (North)	22	25,605	(14%)	41,365	(26%)	+15,760	(+12%)
Eglinton (W. Central)	27	12,162	(52%)	12,685	(46%)	+523	(-6%)
Eglinton (Central)	28	62,443	(52%)	77,476	(60%)	+15,033	(+8%)

Notes: 1. Refer to Exhibit 11 for location of screenlines

2. Inbound direction is towards Yonge Street and the Toronto Central Area.

TABLE 3.11

SCREENLINE TOTAL PERSONS AND TRANSIT MODAL SPLIT

1975 and 1985

(7:00 - 9:00 A.M. OUTBOUND)

		Total Persons (Transit Modal Split)				Change	
SCREENLINE	NO.	1975		1985		1975 - 1985	
Peel/Metro Bdy. (South)	1	12,902	(10%)	13,521	(13%)	+619	(+3%)
Peel/Metro Bdy. (Central)	2	8,921	(2%)	16,546	(6%)	+7,625	(+4%)
Peel Metro Bdy. (North)	3	11,547	(6%)	18,690	(9%)	+7,143	(+3%)
York/Metro Bdy. (West)	4	981	(1%)	1,883	(1%)	+902	(0%)
York/Metro Bdy. (W.Central)	5	7,559	(13%)	11,386	(13%)	+3,827	(0%)
York/Metro Bdy. (Central)	6	5,290	(11%)	7,661	(15%)	+2,371	(+4%)
Humber River (South)	10	20,349	(33%)	22,478	(31%)	+2,129	(-2%)
Humber River (Central)	11	6,293	(15%)	6,855	(19%)	+562	(+4%)
Highway 401 (W. Central)	12	14,186	(19%)	18,443	(16%)	+4,257	(-3%)
Highway 401 (Central)	13	22,069	(25%)	34,820	(37%)	+12,751	(+12%)
Newmarket S/D. (South)	16	29,438	(46%)	27,981	(41%)	-1,457	(-5%)
North Toronto S/D. (Central)	17	31,902	(69%)	35,336	(68%)	+3,434	(-1%)
Highway 401 (West)	19	29,974	(11%)	37,051	(11%)	+7,077	(0%)
Humber River (North)	20	21,703	(5%)	29,535	(6%)	+7,832	(+1%)
Newmarket S/D.(Central)	21	11,801	(34%)	9,938	(31%)	-1,863	(-3%)
Newmarket S/D. (North)	22	24,875	(10%)	34,734	(17%)	+9,859	(+7%)
Eglinton (W. Central)	27	9,121	(44%)	9,378	(28%)	+257	(-16%)
Eglinton (Central)	28	27,076	(42%)	32,750	(45%)	+5,674	(+3%)

Notes: 1. Refer to Exhibit 11 for location of screenlines

2. Inbound direction is towards Yonge Street and the Toronto Central Area.

The changes in modal split for the outbound direction offer a different picture than for the inbound. For the outbound direction, transit modal split declined for screenlines 10, 12, 16, 17, 21 and 27 (-16%) and did not change for screenlines 4, 5 and 19. The remaining 9 screenlines saw a positive shift in transit modal split of up to 12% (for screenline 13). The declines and more modest increases in transit modal split for the outbound direction could possibly be explained by the proportional increase in commuting from Metro to the outlying regions and the subsequent reliance on the auto because of inadequate inter-regional transit (particularly outbound, as GO Rail essentially operates inbound in the a.m. peak period for many of its services).

Trucks

The 1975 and 1985 a.m. peak period truck volumes (inbound and outbound) at the 18 screenlines are shown in Tables 3.12 and 3.13. As with autos, the peak direction for trucks in the a.m. peak period is inbound as indicated by thirteen of the eighteen screenlines.

The trends in truck volumes between 1975 and 1985 are not as constant as for auto/taxi volumes. Whereas 1983 saw a lower auto/taxi count than in 1981 for many roads, for six of the eighteen screenlines 1983 was the highest recorded truck count.

The largest increase in truck volumes for the a.m. peak period was observed inbound at screenline 3 at the Peel/Metro boundary (1,248 trucks 125%) north of, but not including, Highway 401. This increase was undoubtedly due to the growth in industrial areas near the airport and facilitated by several roads being completed across the boundary, i.e. Highway 409, Darcel/Finch, Disco Road. Significant growth in truck volumes can also be seen inbound at screenline number 16 (952 trucks or 38%), 22 (959 or 29%) and 28 (783 or 41%). Screenlines 16 and 28 are just outside the Toronto Central Area to the west and north and show an increase of trucks inbound to the Central Area. In the

TABLE 3.12

INBOUND A.M. PEAK PERIOD SCREENLINE

TRUCK ONLY VOLUMES

SCREENLINE AND	NO.[1.]	A.M. PEAK (7:00-9:00 A.M.) 1975	1985	INCREASE 1975-1985	% INCREASE	PEAK[2.] DIRECTION	COMMENTS
Peel/Metro Bdy. (South)	1	1,676	1,785	109	(6%)	Inbound	1979 Count - 1,983
Peel/Metro Bdy. (Central)	2	1,772	2,356	584	(33%)	Inbound	1983 Count - 2,414
Peel Metro Bdy. (North)	3	1,078	2,426	1,348	(125%)	Inbound	
York/Metro Bdy. (West)	4	401	447	46	(10%)	Inbound	
York/Metro Bdy. (W.Central)	5	1,484	2,053	569	(38%)	Outbound	
York/Metro Bdy. (Central)	6	805	1,180	375	(47%)	Inbound	1983 Count - 1,234
Humber River (South)	10	1,974	2,404	430	(22%)	Inbound	1981 Count - 2,526
Humber River (Central)	11	603	1,040	437	(72%)	Inbound	
Highway 401 (W. Central)	12	1,608	1,576	-32	(-2%)	Outbound	1983 Count - 2,017
Highway 401 (Central)	13	2,680	2,803	123	(5%)	Inbound	1983 Count - 3,060
Newmarket S/D. (South)	16	2,478	3,430	952	(38%)	Inbound	
North Toronto S/D. (Central)	17	1,523	2,014	491	(32%)	Inbound	
Highway 401 (West)	19	3,506	3,639	133	(4%)	Outbound	
Humber River (North)	20	3,401	3,662	261	(8%)	Outbound	1983 Count - 4,193
Newmarket S/D.(Central)	21	1,101	1,513	412	(37%)	Inbound	
Newmarket S/D. (North)	22	3,332	4,291	959	(29%)	Inbound	1979 Count - 4,435
Eglinton (W. Central)	27	814	931	117	(14%)	Outbound	1983 Count - 1,064
Eglinton (Central)	28	1,929	2,712	783	(41%)	Inbound	

Notes: 1. Refer to Exhibit 11 for location of screenlines

2. Inbound direction is towards Yonge Street and the Toronto Central Area.

TABLE 3.13

OUTBOUND A.M. PEAK PERIOD SCREENLINE

TRUCK ONLY VOLUMES

SCREENLINE AND	NO.[1]	A.M. PEAK (7:00-9:00 A.M.)		INCREASE 1975-1985	% INCREASE	PEAK[2] DIRECTION	COMMENTS
		1975	1985				
Peel/Metro Bdy. (South)	1	2,123	1,614	-509	(-32%)	Outbound	1977 Count - 2,195
Peel/Metro Bdy. (Central)	2	1,692	2,301	609	(36%)	Inbound	
Peel Metro Bdy. (North)	3	1,044	1,518	474	(45%)	Inbound	
York/Metro Bdy. (West)	4	246	576	330	(134%)	Inbound	
York/Metro Bdy. (W.Central)	5	1,333	1,727	394	(30%)	Inbound	
York/Metro Bdy. (Central)	6	615	910	295	(48%)	Inbound	
Humber River (South)	10	1,803	1,941	138	(8%)	Inbound	
Humber River (Central)	11	656	834	178	(27%)	Inbound	
Highway 401 (W. Central)	12	1,635	1,887	252	(15%)	Outbound	
Highway 401 (Central)	13	1.675	1,636	-39	(-2%)	Inbound	
Newmarket S/D. (South)	16	2,463	2,861	398	(16%)	Inbound	
North Toronto S/D. (Central)	17	1,182	1,535	353	(30%)	Inbound	
Highway 401 (West)	19	3,155	3,741	586	(19%)	Inbound	
Humber River (North)	20	3,569	3,741	172	(5%)	Outbound	
Newmarket S/D.(Central)	21	978	976	-2	(0%)	Inbound	
Newmarket S/D. (North)	22	2,823	3,473	650	(23%)	Inbound	
Eglinton (W. Central)	27	772	1,009	237	(31%)	Inbound	
Eglinton (Central)	28	1,457	1,999	542	(37%)	Inbound	

Notes: 1. Refer to Exhibit 11 for location of screenlines

2. Inbound direction is towards Yonge Street and the Toronto Central Area.

outbound direction, the largest increases were observed at screenline 22 (650 trucks or 23%), screenline 2 (609 trucks or 36%), screenline 19 (586 trucks or 19%) and screenline 28 (542 trucks or 37%). The first three screenlines are in the outer areas of northwest Metro, while screenline 28 is along Eglinton Avenue north of the Central Area.

Trends in the increase in truck volumes for the 12 hour period (7:00 a.m. to 7:00 p.m.) between 1975 and 1985 were also reviewed. For the inbound direction, the major increases are at the Metro boundary. For the outbound direction, however, the largest increases were at screenline 22 (7,113 or 40%) and screenline 20 (5,396 or 29%) i.e. the two north-south screenlines north of Highway 401 in the Downsview and Rexdale areas. Other major increases were at the Peel/Metro boundary, i.e. screenline 2 (5, 669 or 59%) and screenline 3 (4,790 or 77%).

3.3.3 Volume/Capacity Analysis

The study area is of a size to prevent a volume/capacity (v/c) analysis exercise being carried out which considers every intersection or necessarily every major intersection. An approach was taken in which a sufficient sample of v/c data was gathered throughout the study area in order that an assessment of levels of congestion could be obtained on a sub-area basis without necessarily identifying all deficient links and intersections.

Effort was concentrated on a.m. peak hour analysis although the p.m. peak hour traffic counts are generally higher (particularly towards the Toronto Central Area). As the Metro Travel Demand Model is set up to forecast a.m. peak hour travel, it was considered worthwhile focusing on a.m. peak hour analysis in order to be better able to put into perspective future growth in travel demand.

A two stage approach was used for the v/c analysis. Firstly, in order to utilize the cordon count data, v/c data for each screenline in the study area was collected, and secondly, to infill between the screenlines, selected intersections were chosen to complete the sample of v/c data.

Screenline Capacities

It was considered to be important to obtain the most realistic capacities for the links crossing each screenline, not only to ascertain current v/c deficiencies, but also to help identify the timing of future screenlines capacity deficiencies. It was also felt important to determine a practical capacity for each road crossing the eighteen screenlines. Practical capacity is defined as the maximum hourly volume of traffic that could feasibly cross the screenline on a particular road in question.

Roadway capacities at each screenline were reviewed with the Working Committee and particularly with the Metro Roads and Traffic Department. Essentially, the review kept in mind traffic conditions/restrictions up-stream and down-stream of the section in question. For example, if a capacity was to be determined at a point in close proximity to a signalized intersection, the intersection capacity, determined from the current signal settings, was taken to be the 'practical capacity'. Where a capacity was required at a mid-block point, a link capacity assuming level-of-service 'E' was initially assumed. A comparison with the maximum observed peak hour volume was then made and the capacity adjusted upwards if the observed count was higher. Essentially, capacities were always rated either equal to, or higher than, the maximum observed one-hour count. In some cases, it is possible that a road is in fact operating above capacity (v/c greater than 1.0) with vehicles travelling at close but unsafe headways. However, as v/c analysis is very much an inexact science, and bearing in mind that these analyses are to be used for planning purposes, a rating of 1.0 in such cases will suffice as an indicator of capacity conditions. Table 3.14 summarizes the rated corridor capacities at each screenline together with the 1985 a.m. maximum hour observed count. (A detailed breakdown of the capacities and observed counts for each roadway within each screenline is included in Working Paper #3). It should be noted that a v/c rating of above 0.9 for a screenline is considered to be an indication of capacity conditions for the corridor, given the unlikely occurrence of every road crossing a screenline to be experiencing capacity demand at the same time in a one day (cordon) count.

Grouping several adjacent roads together to form a corridor in order to carry out v/c analysis for predefined screenlines, should be treated with caution in that surplus capacity on one link is implicitly assumed to be available capacity for traffic crossing another part of the screenline. However, the screenline v/c analysis does allow a good overview of capacity deficiencies.

Corridors crossing screenlines 1, 6, 11, 16 and 21 are operating at close to capacity (v/c greater than 0.9) in the a.m. peak hour 1985. In addition, corridors crossing screenlines 10, 11, 17, 22 and 28 have a v/c ratio of between 0.85 and 0.90. The inclusion of screenlines 1, 10 and 16 indicate at or near capacity conditions for traffic travelling along the Lake Shore corridor from west of the Central Area. Conditions along this corridor vary however. Near capacity conditions may exist at the Peel/Metro boundary, while east of Highway 427 spare capacity exists on the QEW until the next bottleneck is reached at the Humber River. Near to capacity conditions can then be observed through to the Central Area. Similarly, the inclusion of screenlines 6, 13, 28 and 17 indicate conditions approaching capacity for southbound traffic in the Yonge Corridor (between the CN Newmarket and Bala Subdivisions). For reasons previously noted in the footnote to Table 3.14, corridors crossing screenlines 1 and 2 (Peel/Metro Boundary) are also considered to be approaching capacity. The v/c ratio in 1987 for the two corridors

TABLE 3.14

VOLUME/CAPACITY ANALYSIS

A.M. MAXIMUM HOUR

Screenline	Capacity		1985 Count		V/C	
No.	In	Out	In	Out	In	Out
1.	14,510	14,510	13,779	6,516	0.95	0.45
2.*	20,240	10,240	12,518	8,234	0.62	0.41
3.	12,860	14,510	7,699	6,823	0.60	0.47
4.	5,480	5,480	3,420	1,253	0.62	0.23
5.	15,020	15,020	7,809	5,642	0.52	0.38
6.	6,960	6,960	6,420	3,237	0.92	0.47
10.	14,410	15,050	12,713	8,879	0.88	0.66
11.	6,130	6,130	5,357	2,957	0.87	0.48
12.	9,560	9,560	6,387	8,173	0.67	0.85
13.	14,050	14,350	11,743	10,596	0.80	0.74
16.	15,410	15,410	14,869	8,007	0.96	0.52
17.	11,910	11,910	10,359	5,057	0.87	0.42
19.	26,130	26,130	13,349	16,585	0.51	0.63
20.	18,240	18,240	13,702	14,671	0.75	0.80
21.	5,580	5,580	5,013	3,155	0.90	0.57
22.	14,410	19,410	16,038	15,652	0.83	0.81
27.	7,020	7,020	3,451	3,617	0.49	0.52
28.	15,570	15,080	13,391	8,704	0.86	0.58

* Highway 401 collector lanes were under construction in 1985; 1987 counts are 6,000 higher while other screenline 1 & 2 counts are down by a total of 3,000 giving a net increase of 3,000 vehicles.

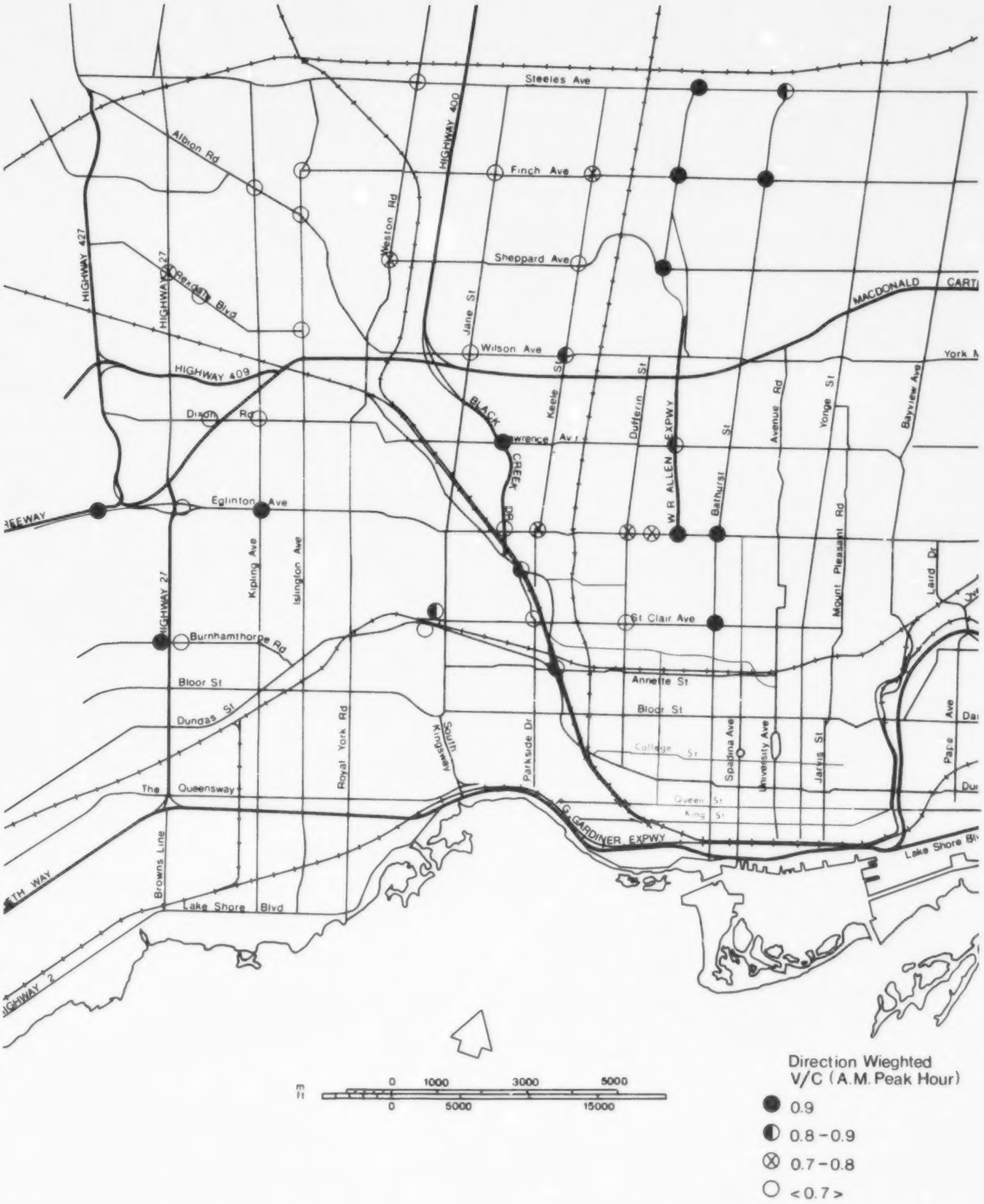
combined would be approximately 0.85. The remaining screenlines (3, 4, 5, 12, 19 and 20) with v/c ratios of under 0.85 are mainly in the northern Etobicoke area and indicate spare capacity for some time to come.

Intersection V/C Analysis

Intersections in the study area were chosen to supplement the screenline data to enlarge the overall assessment of capacity deficiencies. The intersections were chosen firstly, by contacting Traffic Control Centre (T.C.C.) staff in order for them to identify intersections that were thought to be operating at or near capacity, and secondly, by having each member of the Working Committee representing a Metropolitan municipality identify the most critical intersections in the portion of the study area within their municipality. Added to this list were key intersections which would help in the study of the "Areas of Special Interest". Further intersections were then added to ensure a sufficient sample was taken for all parts of the study area. The T.C.C. subsequently produced v/c data for all turns at each of the intersections for a.m., p.m. and off-peak hours using recent counts (1985/86). In addition, the geometrics/lane configurations were checked by field survey to ensure an up-to-date analysis was carried out.

As with the screenline analysis, caution has to be taken in reviewing this data as the theory used for determining capacity is based on empirical data and particular intersections do not necessarily act like the average intersection and also the counts used in the analysis were 1-day counts only, which of course ignores the inherent variability of traffic volumes.

The results of the intersection v/c analysis are summarized on Exhibit 12 and appear to confirm or clarify the screenline analysis in several areas. Firstly, the north Etobicoke area appears to have spare capacity


Steeles Ave
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Finch Ave
HIGHWAY 400
Weston Rd
HIGHWAY 427
HIGHWAY 27
Rexdale Blvd
Sheppard Ave
MACDONALD CARTI
Jane St
Wilson Ave
York M
HIGHWAY 409
BLACK CREEK DR
Keele St
Dufferin St
W R ALLEN EXPWY
Bathurst St
Avenue Rd
Yonge St
Bayview Ave
Dixon Rd
Lawrence Av
EEWAY
Eglinton Ave
Kipling Ave
Islington Ave
Mount Pleasant Rd
Laird Dr
HIGHWAY 27
Burnhamthorpe Rd
St Clair Ave
Annette St
Bloor St
Bloor St
Dundas St
Royal York Rd
South Kingsway
Parkside Dr
College St
Spadina Ave
University Ave
Jarvis St
Pape Ave
Da
The Queensway
Queen St
King St
Du
F G GARDINER EXPWY
Lake Shore Bl
ETH WAY
Browns Line
Lake Shore Blvd
HIGHWAY 2
m
ft
0
1000
3000
5000
0
5000
15000
Direction Wieghted
V/C (A.M. Peak Hour)
● 0.9
◐ 0.8 - 0.9
⊗ 0.7 - 0.8
○ <0.7>

EXHIBIT 12:
INTERSECTION V/C ANALYSIS

at all the intersections included in this analysis. Secondly, intersections are shown to be operating near to capacity east of the CN Newmarket subdivision, but do not appear to be west of this screenline. Thirdly, the intersection v/c analysis appears to confirm the Peel/Metro boundary commuting problems on Burnhamthorpe and Eglinton to be mainly west of, rather than east of Highway 427. The intersection analysis east of the Humber River and below Highway 401, does not offer a clear or conclusive picture of capacity problems, but instead offers a picture of general congestion with a significant number of the intersections considered operating at near to capacity conditions.

3.3.4 Speed Data

Observed link speeds can provide a valuable insight into areas of congestion perhaps more so than volume/capacity analysis, as capacities can be difficult to determine.

Auto speed data is not collected on a regular basis. The last significant speed data collection exercise was carried out in 1978 (see Exhibit 13). For this exercise, data was collected for most, but not all, Metro roads in the a.m. and p.m. peak periods. A limited amount of speed data was collected in the fall of 1986 as a part of this study. (See Exhibit 14).

Transit operating speeds have, for many years, been collated and published on a monthly basis by the Toronto Transit Commission (TTC) based on current scheduling. However, this data includes layover time and distortions introduced through route blending requirements which are not easily accounted for in order to arrive at a true average operating speed. For this study, the T.T.C. Service Planning Department prepared a comprehensive set of operating speeds by segment, for major routes in Metro with the layover times excluded. It should be remembered that a direct correlation with auto speeds cannot be made as factors such as ridership turnover, frequency of stops, etc., prevent a direct comparison.

Auto Speeds

The 1978 survey indicated a picture of higher speeds in the outer areas of Metro, i.e. west of the Humber River, north of Highway 401 and east of Victoria Park Avenue. There were a few individual exceptions to this, but generally this is the case. Observed speeds for the remaining inner Metropolitan area were generally lower. There are two distinct areas that showed groupings of road links with lower speeds. Firstly there was one grouping in the Don Valley area between Lawrence Avenue and Finch Avenue, and between Victoria Park Avenue and Leslie Street. The second, and wider area of low auto speeds, was delineated effectively by the north-west portion of the City of Toronto and part of the City of York. The lower speeds near to the Central Area are to be expected for any Metropolitan core area because of the higher density development, and in this case generally narrow rights-of-way and frequent access points and traffic signals.

The second area of low speed was in the 'mid-northwest' area covering York and a small portion of Toronto. The inclusion of this area can be explained by the fact that this area was developed in approximately the same time period as the Central Area (in other words, at a time before the magnitude and impact of automobile travel could be foreseen). The streets in this area have narrow rights-of-way which for the most part, preclude road widening, while frequent access points further reduce the utility of the roads. It should be noted that the slower speeds in this area were experienced on the east-west roads (Lawrence Avenue West, Eglinton Avenue West and St. Clair Avenue West), while the north-south roads (Weston Road, Dufferin Street, Bathurst Street) are generally higher. This phenomena can partly be explained by the fact that there is a greater frequency of north-south arterials and collectors in this area than there are east-west links.

Since 1978, traffic volumes have increased significantly across the Metro boundary and to a lesser extent across the inner Metro cordons.

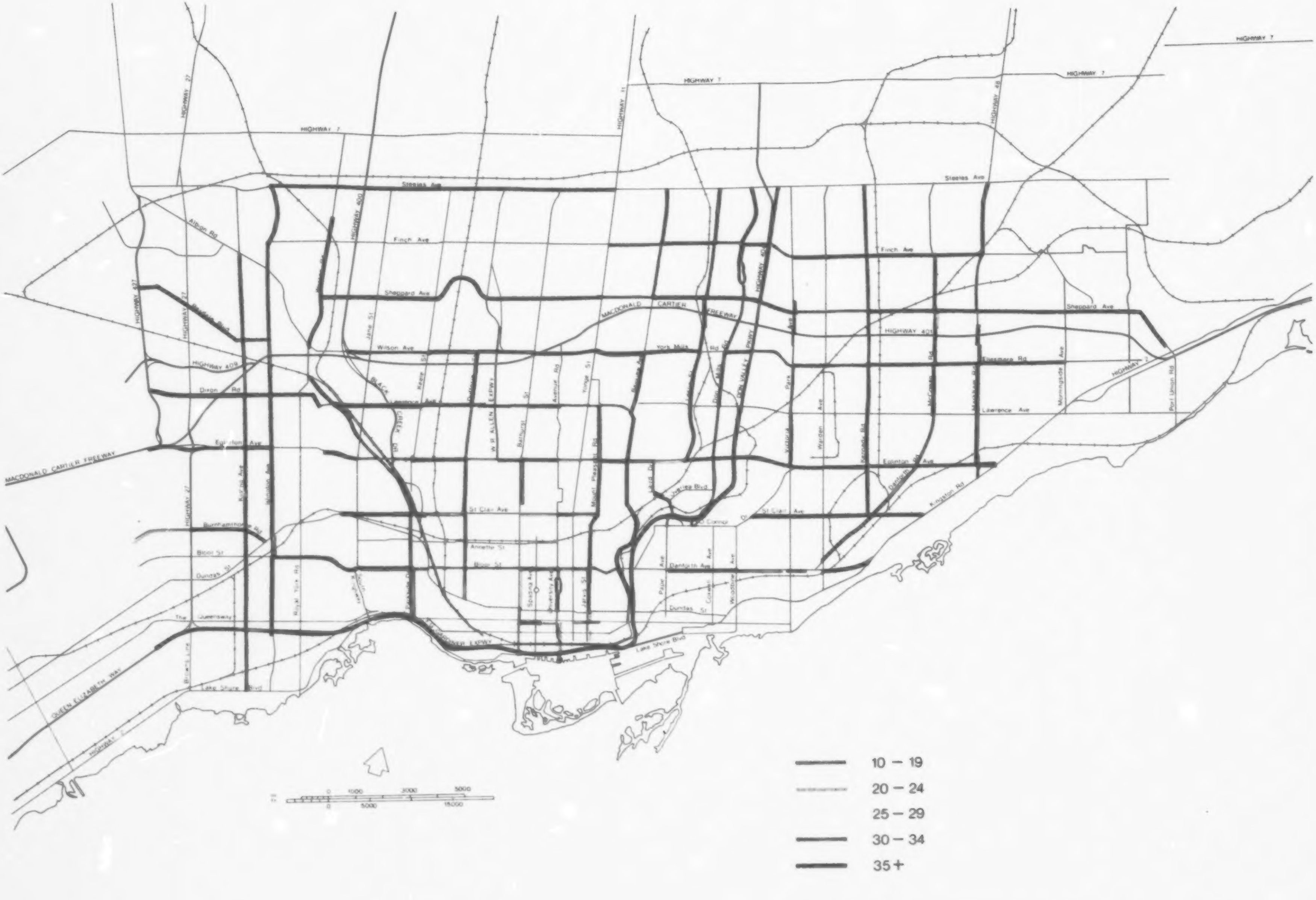

HIGHWAY 7
HIGHWAY 7
HIGHWAY 7
HIGHWAY 27
HIGHWAY 11
HIGHWAY 48
Steeles Ave
Steeles Ave
HIGHWAY 400
Albion Rd
Finch Ave
Finch Ave
Sheppard Ave
Sheppard Ave
HIGHWAY 427
HIGHWAY 27
Jane St
MACDONALD CARTIER FREEWAY
HIGHWAY 401
Wilson Ave
York Mills Rd
DON VALLEY PKWY
Park Ave
HIGHWAY 409
Ellesmere Rd
Keele St
Dixon Rd
BLACK CREEK DR
Lawrence Ave
Lawrence Ave
W.R. ALLEN EXPWY
Bathurst St
Avenue Rd
Yonge St
Bayview Ave
Leslie St
Don Mills Rd
Victoria Park Ave
Warden Ave
Kennedy Rd
McCowan Rd
Markham Rd
Morningside Ave
HIGHWAY 2
Port Union Rd
Eglinton Ave
Eglinton Ave
MACDONALD CARTIER FREEWAY
Kipling Ave
Islington Ave
Mount Pleasant Rd
Laird Dr
Bayview Blvd
Danforth Rd
Kingston Rd
HIGHWAY 27
St Clair Ave
St Clair Ave
O'Connor Dr
Burnhamthorpe Rd
Annette St
Bloor St
Bloor St
Dundas St
Dundas St
Danforth Ave
Pape Ave
Coxwell Ave
Woodbine Ave
Royal York Rd
Parkside Dr
Spadina Ave
University Ave
Jarvis St
The Queensway
F.G. GARDINER EXPWY
Lake Shore Blvd
Lake Shore Blvd
Browns Line
QUEEN ELIZABETH WAY
HIGHWAY 2
0 1000 2000 3000
0 5000 15000
10 – 19
20 – 24
25 – 29
30 – 34
35 +

EXHIBIT 13:
AUTO TRAVEL SPEED A.M. PEAK PERIOD, 1978

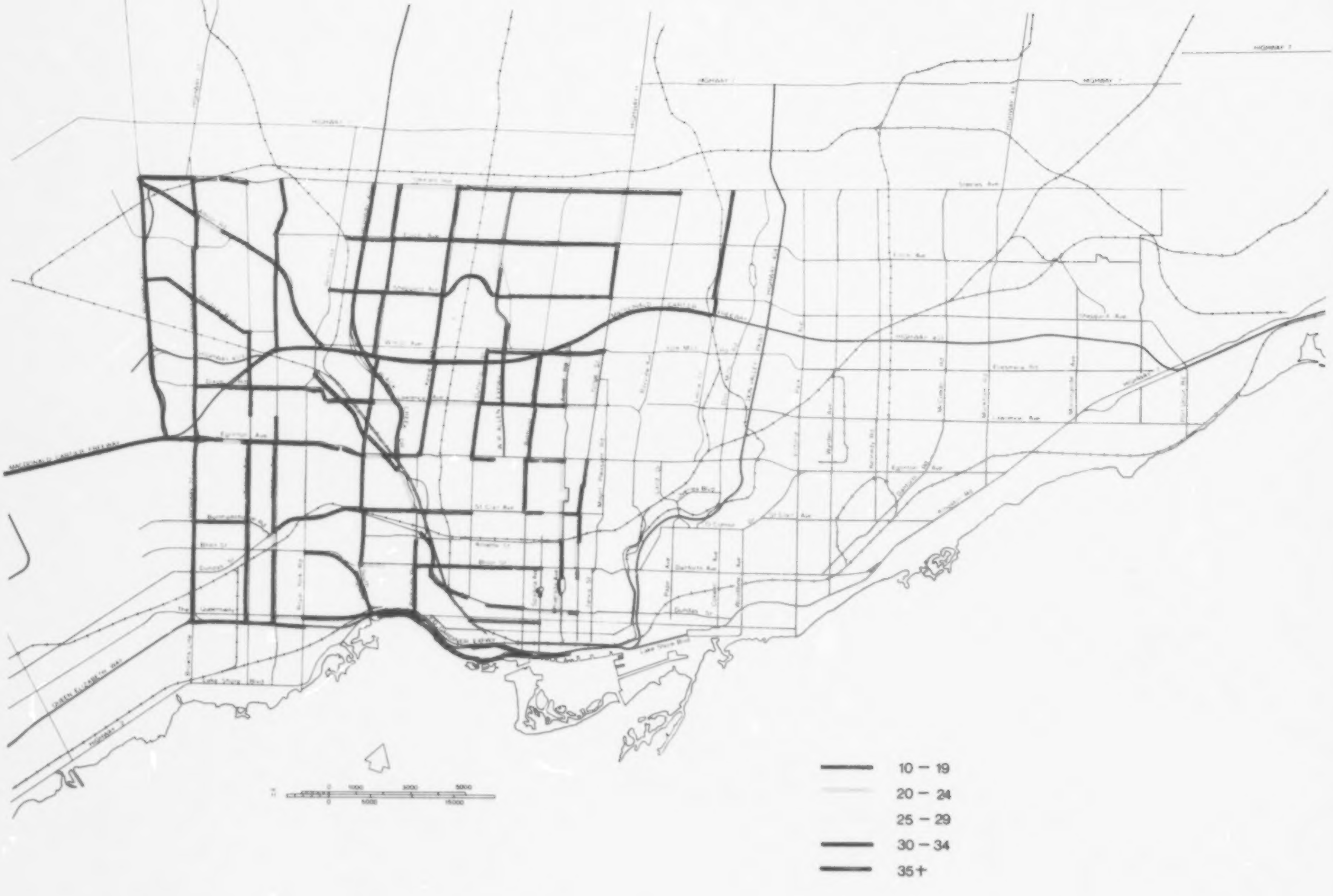

10 – 19
20 – 24
25 – 29
30 – 34
35+
Highway 7
Steeles Ave
Finch Ave
Sheppard Ave
Lawrence Ave
Eglinton Ave
St Clair Ave
Bloor St
Dundas St
Danforth Ave
Queen Elizabeth Way
Lake Shore Blvd
0 1000 3000 5000
0 5000 15000

EXHIBIT 14:
AUTO TRAVEL SPEED A.M. PEAK PERIOD, 1986

The pattern of auto speeds through the study area will have likely changed relatively from one area to another in the years since 1978. It was decided therefore, to collect up-to-date auto travel speeds for the study area to confirm any trends. Exhibit 14 illustrates the speed data collected. A low sample of speed data was collected for certain of the roads due to limited resources. Therefore, the data is sufficient for comparison on an area wide basis, but not however, for individual links.

The Toronto Central Area is again shown to have the main grouping of low speeds for both north-south and east-west routes. The 'mid-northwest' area (essentially P.D.3) is shown to have similar groupings of low speed links (as in 1978) and again essentially east-west but not north-south links (e.g. speeds appeared to have increased along Weston Road, due no doubt to the opening of Black Creek Drive in the interim). The speeds along Lawrence Avenue, Eglinton Avenue and St. Clair Avenue in this area appeared to have fallen since 1978.

Very little speed data was collected in 1978 for the Downsview area of North York. The data collected for this study indicates that speeds along Steeles Avenue (from Highway 27 to Yonge Street) have dropped significantly, and Dufferin Street appears to be significantly congested.

Auto speeds in Etobicoke still appeared to be generally good in 1986, particularly in comparison to roads east of the Humber. A few isolated links appear to have experienced reductions in speed (e.g. Eglinton between Martin Grove and Kipling, and in the Islington/Dundas area). Speeds along the Queen Elizabeth Way/Gardiner Expressway appear to have fallen between Royal York Road and Dufferin Street.

Transit Speeds

The Service Planning Department of the TTC has compiled a sample of average operating speeds for the main bus routes throughout Metro. Average operating speed is dependent on many factors, including road width, auto volumes, access frequency, frequency of stops, passenger volumes, on-street parking, etc. In addition to these there are more service related factors at play, which are not the result of external restrictions. For example, blending of overlapping express and local routes can result in the slowing down of a service purposely to fit in with another route.

Exhibit 15 illustrates the 1986 a.m. peak hour period operating speeds by section for the main bus and streetcar routes in Metro. The majority of the Central Area routes are not included. These routes will be mostly the slowest in Metro as they are generally along roads with narrow right-of-ways and utilize streetcar or trolley buses which, unlike diesel buses, find it difficult to avoid congestion and particularly the obstruction of left-turning autos. However, there are two converging subway lines counteracting the low service levels of the surface routes as well as seven commuter rail lines converging at Union Station. For these reasons, it is not possible to realistically compare transit service in the Central Area with other parts of Metro. The exhibit shows quite clearly the slow east-west routes in the study area, east of the Humber River, i.e. Wilson, Lawrence, Eglinton and St. Clair. The north-south routes in the study area are either some of the fastest routes (i.e. Etobicoke) or toward the lower end of the range (i.e. east of the Humber River). The suburban cities of Scarborough and Etobicoke have generally the best surface transit operating speeds. Of the routes contained in the study area, the fastest routes are Eglinton West (between Renforth and Jane Street) at 18.4 mph and Islington and Kipling (both, south of Rexdale Boulevard) at 16.08 mph. With the exception of the Central Area, the slowest routes in the study area are Eglinton Avenue east of Keele Street, Wilson Avenue (Jane Street to Yonge Street) Lawrence Avenue (Keele to Yonge Street) and Weston Road (between Church Street and Eglinton Avenue West) all of which are just over 9 mph.

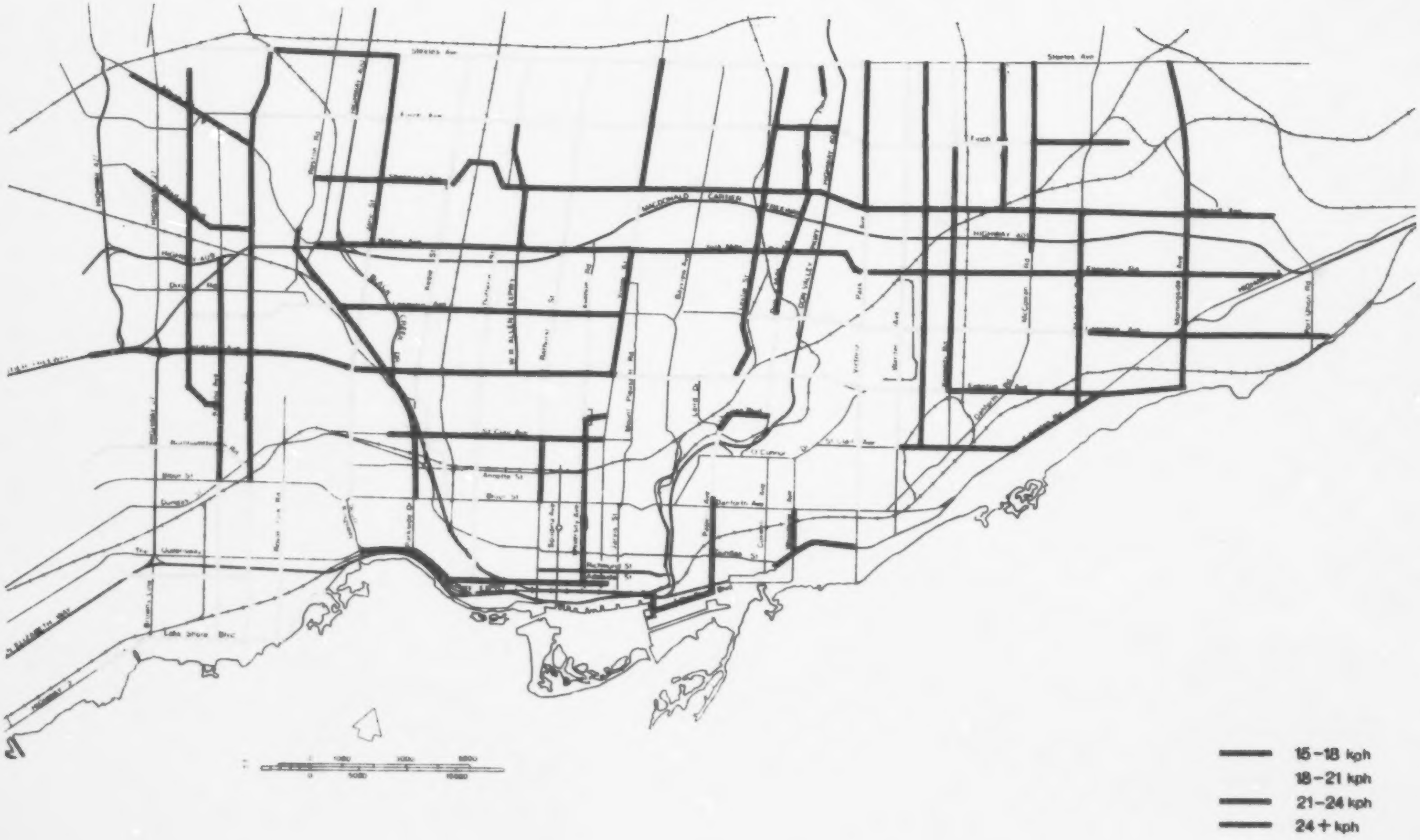

Steeles Ave
Finch Ave
Finch
MACDONALD CARTIER FREEWAY
Highway 401
Highway 27
Kipling Ave
Islington Ave
Weston Rd
Jane St
Keele St
Dufferin St
W R ALLEN EXPWY
Bathurst St
Avenue Rd
Yonge St
Bayview Ave
Leslie St
DON VALLEY PKWY
Victoria Park Ave
Warden Ave
Kennedy Rd
McCowan Rd
Markham Rd
Morningside Ave
Port Union Rd
Eglinton Ave
Ellesmere Rd
Lawrence Ave
St Clair Ave
O'Connor Dr
Danforth Ave
Danforth Rd
Kingston Rd
Mount Pleasant Rd
Laird Dr
Annette St
Bloor St
Dundas St
Burnhamthorpe Rd
Royal York Rd
Parkside Dr
Spadina Ave
University Ave
Jarvis St
Pape Ave
Coxwell Ave
Main St
Richmond St
Adelaide St
The Queensway
Browns Line
Lake Shore Blvd
Queen Elizabeth Way
0
1000
2000
3000
5000
10000
15-18 kph
18-21 kph
21-24 kph
24+ kph

EXHIBIT 15:
BUS AND STREETCAR SCHEDULED OPERATING SPEEDS
(1986, A.M. PEAK PERIOD)
(EXCLUDES LAYOVER TIME)

3.3.5 Accident Data

An important indicator of current road conditions in the study area is the location and frequency of road accidents. This indicator does not reflect the lack of capacity of course, but instead reflects other factors such as poor sight-lines, gradients etc. As in other areas of research for this study, attention was focused on the strategic road network, i.e. the Provincial and Metro road networks. Accident data has been collected from the Ministry of Transportation and Metropolitan Toronto Roads and Traffic Department. Accident rates are not available for each intersection. While accident rate is the best comparative statistic, total accidents at each intersection has been used, and should therefore only be used for a general, area wide comparison.

An extensive amount of accident data was gathered throughout the study area and this is documented in Working Paper #3. The prime area of analysis with respect to the study focussed on the major intersections of Metro arterial roadways.

Exhibit 16 contains a plot of the top 50 accident locations (by number, not rate) in Metro in the study area for each year between 1982 and 1985. It indicates clearly the groupings of intersections with poor accident records. The most obvious groupings are seen in the Toronto Central Area, St. Clair Avenue, and Rogers Road area. This grouping may be accentuated because of the denser Metro road grid in the area. Several intersections along Eglinton Avenue West are shown to have a poor accident record. The next most consistent grouping is in the Sheppard Avenue, Finch Avenue area between Highway 400 and Bathurst Street. In Etobicoke, groupings can be seen along Dixon Road and, to a lesser extent, Albion Road.

Certain intersections can appear in the worst accident list in one year and not the next. This may be due to the Metro Roads and Traffic Department having diagnosed the problem and made changes to the geometrics and/or signal timing, or there may be other factors at play. It is therefore, difficult to identify certain intersections in the study area as being perennial accident 'black spots'. For example, the worst intersection in 1985, with 47 accidents was at Allen Road/Sheppard Avenue. The previous year there were only half that many accidents (25) at this location.

Intersections in the study area that have appeared in the Metro top fifty list for each of the four years between 1982 and 1985 are listed below. (Note that the accident rates are for 1985, and represent the number of accidents per million vehicles entering the intersection):

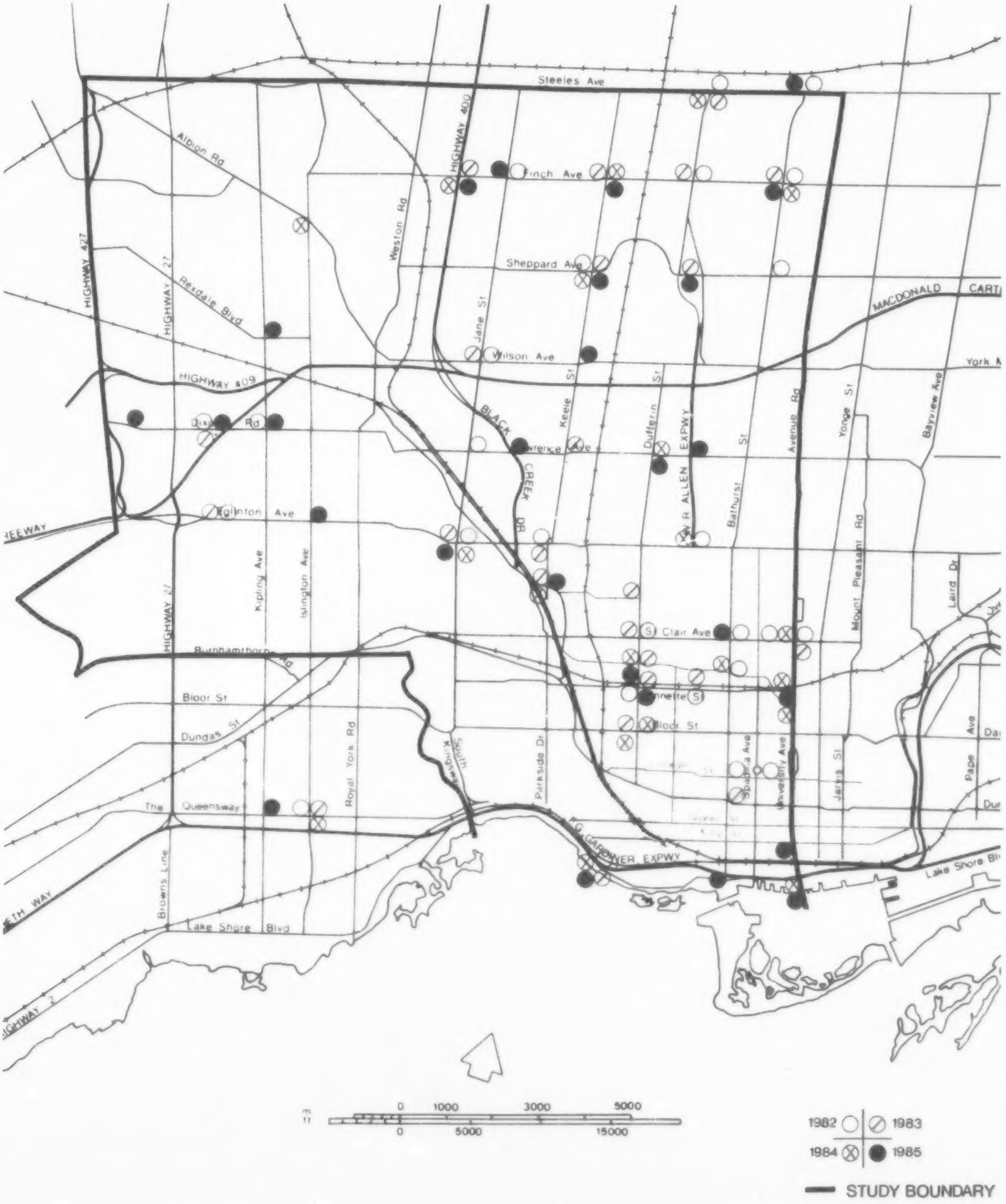
- Jane Street/Eglinton Avenue - 1.66;
- Finch Avenue/Bathurst Street - 1.48; and
- Lakeshore/Jamieson Avenue - 1.77.

Additional intersections in the study area that have appeared in the Metro top fifty list for at least three of the four years between 1982 and 1985 inclusive are:

- Finch Avenue/Keele Street - 1.17;
- Steeles Avenue/Dufferin Street - (not in 1985 top 50);
- Dixon Road/Martingrove Road - 1.62;
- St. Clair Avenue/Avenue Road - (not in 1985 top 50);
- Dufferin Street/Davenport Road - 1.75; and
- Weston Road/Rogers Road - 2.17.

Out of the top 100 accident list (by number) for 1985, intersections in the study area that have high accident rates are:

Intersection	No. of Accidents	Accident Rate	Metropolitan Ranking (by rate)
Wellington St.W./ John St.	33	7.53	Highest
Weston Rd./ Rogers Road	31	2.17	3rd highest


Steeles Ave
Albion Rd
HIGHWAY 400
Finch Ave
Weston Rd
HIGHWAY 427
HIGHWAY 27
Rexdale Blvd
Sheppard Ave
MACDONALD
CART
Jane St
Wilson Ave
York M
HIGHWAY 409
BLACK CREEK DR
Keele St
Dufferin St
W R ALLEN EXPWY
Bathurst St
Avenue Rd
Yonge St
Bayview Ave
Dixon Rd
Lawrence Ave
Eglinton Ave
FREEWAY
Kipling Ave
Islington Ave
Mount Pleasant Rd
Laird Dr
St Clair Ave
Burnhamthorpe Rd
Bloor St
Jennette St
Bloor St
Dundas St
Royal York Rd
South Kingsway
Parkside Dr
Spadina Ave
University Ave
Jarvis St
Pape Ave
The Queensway
F.G. GARDINER EXPWY
Lake Shore Blvd
Browns Line
Lake Shore Blvd
ETH WAY
HIGHWAY 2
0 1000 3000 5000
0 5000 15000
1982 ○ ⊘ 1983
1984 ⊗ ● 1985
STUDY BOUNDARY

NOTE - The top fifty accident locations are
defined (for this exercise) by number and not rate
Accident rate is a better indicator of problems
but it was not available for all four years

EXHIBIT 16:
THE OCCURRENCE OF INTERSECTIONS
IN THE TOP FIFTY ACCIDENT LOCATIONS
(FOR ALL OF METRO) 1982-1985

Intersection	No. of Accidents	Accident Rate	Metropolitan Ranking (by rate)
Dixon Road/ Kipling Avenue	30	1.84	7th highest
Black Creek Dr./ Lawrence Ave.	30	1.84	8th highest
Lake Shore Blvd. West/Jamieson	41	1.77	9th highest
Davenport Rd./ Dufferin St.	27	1.75	10th highest

4.0 FUTURE POPULATION, EMPLOYMENT AND TRAVEL DEMANDS

Future conditions are presented in this chapter from the perspective of (1) land use and (2) travel demands.

4.1 FUTURE LAND USE

Chapter 3 discussed recent demographic changes within the context of (1) the Greater Toronto Area (GTA) and (2) the specific study area. A similar approach has been followed within this chapter when discussing future land use.

A number of current land use forecasts are available for the study area. These forecasts provide projections for the years 1991, 2001 and 2011. Three separate forecasts that have been reviewed as part of this study are:

- M1-86 (Metropolitan Planning Department, Research Division);
- Modified GO-ALRT "A" Forecast (until recently, used by Peel Region although Peel is in the process of updating its land use forecasts); and
- MTO Current Forecasts high and low growth (Demand Research Office).

It should be noted that the Region of York has recently been updating its forecasts, but these were not available for this study.

The three forecasts that were reviewed have similarities that show:

- no significant population growth in Metropolitan Toronto;
- significant employment and population growth in the outlying Regions; and
- significant employment growth within Metropolitan Toronto.

All three forecasts have overall similarities, and therefore attention has been focussed on one set of forecasts, M1-86, to discuss the essential relevance to the study. The main differences of the various forecasts are then discussed later in the chapter in the context of a sensitivity analysis.

4.1.1 GTA Future Land Use

Table 4.1 provides a summary of population, employment and employed labour force throughout the GTA for 1985, 1991, 2001 and 2011. From this table it is appropriate to draw attention to the following:

- The population of the GTA is anticipated to grow by 904,000 (28%) to the year 2011. Primarily this growth will occur in the regions outside of Metro. The largest anticipated growth areas are the Regions of Peel and York with increases of 465,000 and 268,000 persons respectively. This represents an 82% and 93% increase respectively for each region to the year 2011;
- The GTA as a whole has a forecast increase in E.L.F. of 595,000 to the year 2011. As with population, the major increases in E.L.F. are predicted for the Regions of Peel and York. E.L.F. is forecast to grow by 316,000 and 178,000 in Peel and York Regions respectively to the year 2011;
- Total employment for the G.T.A. is projected to increase beyond 1985 totals by 723,000 (44%) to 2,352,000 by the year 2011. The majority of the increase in total employment occurs in the Regions of York, Peel and Metropolitan Toronto (670,000 jobs or 93% of the total projected increase) as summarised below:

York	122,000	(17%)
Peel	246,000	(34%)
Metro	302,000	(42%)
Others	53,000	(7%)
Total	723,000	(100%)

- The relationship of employed labour force divided by employment for Metro as a whole, was 1.14 in 1981. This is forecast to steadily decline to 0.83 by the year 2011.

TABLE 4.1

LAND USE FORECASTS FOR THE GREATER TORONTO AREA
FORECAST (M1-86)

	1985	1985-1991 Increase	1991	1985-2001 Increase	2001	1985-2011 Increase	2011
G.T.A. POPULATION							
Peel	569,556	122,362	691,918	301,997	871,553	465,250	1,034,806
E. Halton	153,494	9,965	163,459	34,181	187,675	58,931	212,425
York	289,175	65,765	354,940	177,528	466,703	268,089	557,264
Pickering/Ajax	79,521	10,826	90,347	42,364	121,885	72,447	151,968
Metropolitan Toronto	2,154,537	36,912	2,183,817	39,742	2,186,647	39,396	2,193,933
Total	**3,246,283**	**245,830**	**3,484,481**	**595,812**	**3,834,463**	**904,113**	**4,150,396**
G.T.A. EMPLOYED LABOUR FORCE (1)							
Peel	263,415	121,404	384,819	232,325	495,740	315,950	579,365
E. Halton	71,840	13,508	85,348	27,688	99,528	37,579	109,419
York	114,230	73,141	187.371	137,033	251,263	178,208	292,438
Pickering/Ajax	32,940	14,078	47,018	30,983	63,923	44,229	77,169
Metropolitan Toronto	1,207,790	63,350	1,271,140	38,124	1,245,914	18,856	1,226,646
Total	**1,690,215**	**285,481**	**1,975,696**	**466,153**	**2,156,368**	**594,822**	**2,285,037**
G.T.A. EMPLOYMENT							
Peel (2)	227,086	92,814	319,900	173,894	400,980	245,754	472,840
E. Halton (2)	53,155	11,865	65,020	24,145	77,300	33,205	86,360
York	143,753	44,902	188,655	89,047	232,800	121,822	265,575
Pickering/Ajax (2)	21,150	5,490	27,000	12,990	34,500	19,890	41,400
Metropolitan Toronto	1,183,518	154,550	1,338,068	240,226	1,423,744	302,068	1,485,586
Total	**1,629,022**	**309,621**	**1,938,643**	**540,302**	**2,169,324**	**722,739**	**2,351,761**

Notes:
(1) E.L.F. counted in Census years only, hence 1985 data not available
(2) Employment figures 1981.

4.1.2 Study Area Future Land Use

As discussed in Chapter 3.1.3 the study area can be generally represented by planning districts 1, 2, 3, 8, 9 and 10.

Table 4.2 provides a summary of population, employed labour force and employment for 1985, 1991, 2001 and 2011. From this table it is appropriate to draw attention to the following:

- The only part of the generalized study area that is forecast to experience significant population growth, as already noted, is the Central Area (P.D.1), from 126,000 in 1985 to 183,000 in 2011. This growth will take place mainly in the Harbourfront and Railway Lands developments. P.D.s 2 and 3 are projected to have a decrease in population of 20,000 (9%) to the year 2011. This area reached its potential for residential growth before 1971. Central and northern Etobicoke (P.D.s 8 and 9) are expected to have a net decrease in population of 15,000 by 2011, although P.D.9 population is expected to increase by 2,400 (3%) up to 1991, but then decrease by 2,900 people to 72,000 in 2011. P.D. 10, the western portion of North York is expected to reach its maximum population in the 1980's and is expected to decrease by 15,000 (10%) by the year 2011;
- As with population, a general decline in E.L.F. on the whole is forecast for the generalized study area from 1981 to 2011. Only P.D.1 and P.D.9 (peaking in 1991) show any net increase, 37,000 (54%) and 3,000 (8%) respectively to the year 2011. P.D.s 2,3,8 and 10 collectively decreased by 42,000 (10%) from 419,000 in 1981 to 377,000 in 2011;
- Of the total employment growth (159,000) forecast for the generalized study area, P.D.1 comprises 102,000 or 64%, leaving 57,000 (36%) to be distributed throughout the rest of the study area. P.D.s 2 and 3 are forecast to increase by 8,600 and 9,200 in total employment respectively. P.D.10 is projected to increase by 5,700 (5%) to the year 2011. P.D.s 8 (which includes the

TABLE 4.2

STUDY AREA FORECASTS (M1-86)

BY MAJOR PLANNING DISTRICT

STUDY AREA POPULATION

Planning District (Study Area)	1985	Increase 1985–1991	1991	Increase 1985–2001	2001	Increase 1985–2011	2011
1.	126,384	18,095 14%	144,479	36,965 29%	163,349	57,278 45%	183,662
2.	192,879	–7,972 –4%	184,907	–7,897 –4%	184,982	–7,903 –4%	184,976
3.	220,596	–1,517 –1%	219,079	–8,481 –4%	212,115	–12,099 –5%	208,497
8.	174,047	–3,517 –2%	170,530	–9,205 –5%	164,842	–11,648 –7%	162,399
9.	75,192	2,395 3%	77,587	–853 –1%	74,339	2,925 –4%	72,267
10.	146,099	–1,992 –1%	144,107	–9,936 7%	136,163	–14,850 –10%	131,249
TOTAL	935,197	5,492 1%	940,689	593 0%	935,790	7,853 1%	934,050

STUDY AREA EMPLOYED LABOUR FORCE

Planning District (Study Area)	1981 Census	Increase 1981–1991	1991	Increase 1981–2001	2001	Increase 1981–2011	2011
1.	69,110	21,359 31%	90,469	28,943 42%	98,053	37,078 54%	106,188
2.	112,280	–7,494 –7%	104,786	–11,296 –10%	100,984	–14,405 –13%	97,875
3.	121,375	–610 –1%	120,765	–7,670 –6%	113,705	–11,549 –10%	109,826
8.	104,990	–1,923 –2%	103,067	–6,956 –7%	98,034	–9,429 –9%	95,561
9.	38,045	6,877 18%	44,992	4,402 12%	42,447	2,955 8%	41,000
10.	79,890	2,956 4%	82,846	–2,962 –4%	76,928	–6,523 –8%	73,367
TOTAL	525,690	21,165 4%	546,855	4,461 1%	530,151	–1,873 –1%	523,817

STUDY AREA EMPLOYMENT

Planning District (Study Area)	1985	Increase 1985–1991	1991	Increase 1985–2001	2001	Increase 1985–2011	2011
1.	371,540	41,992 11%	413,532	76,137 20%	447,677	102,066 27%	473,606
2.	44,729	6,344 14%	51,073	9,020 20%	53,749	8,598 19%	53,327
3.	86,044	6,061 7%	92,105	8,390 10%	94,434	9,172 11%	95,216
8.	66,889	8,000 12%	74,889	14,953 22%	81,842	19,026 28%	85,915
9.	64,262	7,984 12%	72,246	12,894 20%	77,156	14,697 23%	78,959
10.	104,215	3,511 3%	107,726	3,937 4%	108,152	5,652 5%	109,867
TOTAL	737,679	73,892 10%	811,571	12,531 17%	863,010	159,211 22%	896,890

Islington/Kipling Centre) and 9, north Etobicoke, are forecast to increase by 19,000 (28%) and 15,000 (23%) respectively. The distribution of forecast employment growth to 2011 for the study area and environs (including the North York Centre) is illustrated in Exhibit 17.

4.1.3 Comparison of M1-86 with Other Forecasts

Two additional land use forecasts currently being used by agencies other than Metro have been reviewed. The additional forecasts are:

- Modified GO-ALRT "A" (Peel Region); and
- M.T.O. Current Forecasts (high and low growth).

Table 4.3 tabulates the three different forecasts for population and employment. The M.T.O. forecasts can be seen to show slightly more population growth for York Region than the other forecasts and less to Peel Region. The main difference for the employment totals is the significantly lower totals forecast by M.T.O. for Peel Region and again higher totals for York Region. These differences of growth between Peel and York Regions are the most significant for this study in terms of travel demand.

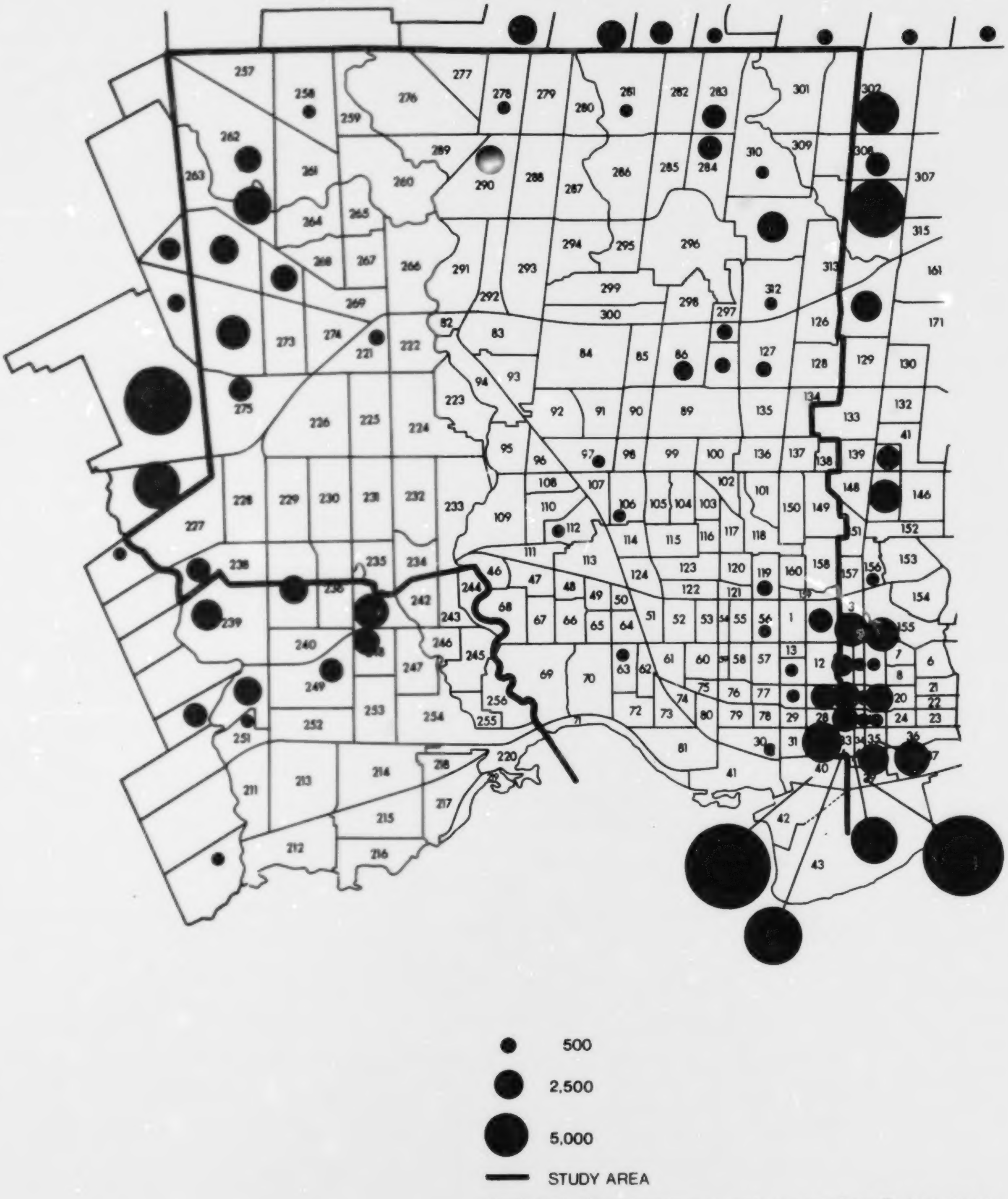
4.2 TRAVEL DEMAND FORECASTS

Travel demand forecasts are discussed from the viewpoint of (1) the future change in trip distribution, (2) the future change in travel demands by screenline (3) an overview of the forecasts and (4) the sensitivity of the travel demand forecasts.

4.2.1 Change in Trip Distribution

A detailed analysis of the forecast changes in trip distribution by major planning district is included in Working Paper #4. These changes as forecast by the Metro travel demand model are summarized here.

It should be noted that, due to the similarity of the other land use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23
255
252
71
36
251
81
30
31
33
34
35
37
220
214
218
40
211
213
41
217
215
42
212
216
43
500
2,500
5,000
STUDY AREA

Number of Jobs proportional to area of circle (4mm² - 500 JOBS)

EXHIBIT 17: EMPLOYMENT GROWTH BY TARMS ZONE (INCREASES < 500 JOBS) 1985 - 2011

TABLE 4.3

COMPARISON OF POPULATION FORECASTS FOR 2011

	1985 Actual	M1-86	(Mod) GO-ALRT 'A'	MTC (Low)	MTC (High)
Peel	569,556 (18%)	1,034,806 (25%)	1,119,998 (25%)	834,000 (22%)	914,000 (22%)
East Halton	153,494 (5%)	212,425 (5%)	288,900 (7%)	122,000 (3%)	158,000 (4%)
York	289,175 (9%)	557,264 (13%)	616,000 (14%)	566,000 (15%)	680,000 (16%)
Pickering/Ajax	79,521 (2%)	151,968 (4%)	126,000 (3%)	137,000 (4%)	161,000 (4%)
Metropolitan Toronto	2,146,905 (66%)	2,193,933 (53%)	2,247,400 (51%)	2,190,000 (56%)	2,300,000 (54%)
TOTAL	3,238,651 (100%)	4,150,396 (100%)	4,398,298(100%)	3,849,000 (100%)	4,198,000 (100%)

COMPARISON OF EMPLOYMENT FORECASTS FOR 2011

	1985 Actual	M1-86	(Mod) GO-ALRT 'A'	MTC (Low)	MTC (High)
Peel	277,086 (14%)	472,840 (20%)	621,272 (24%)	414,400 (18%)	439,400 (17%)
East Halton	53,155 (3%)	86,360 (4%)	104,333 (4%)	82,000 (4%)	101,000 (4%)
York	143,753 (9%)	265,575 (11%)	271,000 (11%)	251,200 (11%)	370,000 (14%)
Pickering/Ajax	21,510 (1%)	41,400 (2%)	51,300 (2%)	45,000 (2%)	55,000 (2%)
Metropolitan Toronto	1,183,518 (73%)	1,485,586 (63%)	1,500,900 (59%)	1,507,900 (65%)	1,602,900 (63%)
TOTAL	1,629,022 (100%)	2,351,761 (100%)	2,548,805(100%)	2,300,500 (100%)	2,568,300 (100%)

scenarios, (as discussed in Chapter 4.1) the general trends in distribution are similar, the main differences in the forecast are in magnitude.

P.D.1 (Central Area)

The large increase in the employed labour force for this planning district is forecast to find employment mainly within P.D.1 or within a short distance of P.D.1. This is a similar distribution to the existing P.D.1 E.L.F.

The distribution of trips to P.D.1, shows a significant change over the coming years. There is shown a large loss in trips from other parts of Metro (the eastern inner Metropolitan area in particular) and major increases in trips from the outlying regions (Peel in particular). This change in distribution is clearly illustrated by the following statistics. For every new trip to P.D.1 over the next 25 years the following marginal change in trip origins will result:

+0.90 trips from areas outside Metro to P.D.1;
+0.50 trips from P.D.1 to P.D.1;
+0.02 trips from Metro outer area to P.D.1; and
-0.42 trips from Metro inner area to P.D.1. (i.e. lost trips due to a declining E.L.F. and increased scatter of distribution).

In 1981, the percentage of P.D.1 employees living in the outlying regions was 12% (7% Peel and Halton, 5% from York and Durham). By 2011, this is forecast to be 21% (12% from Peel and Halton, 9% from York and Durham).

There will be virtually no change in the number of trips originating from the study area to P.D.1, other than a decline from P.D.2 (west Toronto) and P.D.3 (City of York). When looking at the changing dependency on P.D.1 for employment, there is shown to be a small increase in dependency for the northwest study area. However, this increased dependency is offset by a decreasing E.L.F. resulting in either a decline or no change in total trips to P.D.1. The relative reducing dependency of east Metro and York and Durham Regions on P.D.1 is explained by the fact that there are generally more intervening (employment) opportunities in these areas (e.g. Scarborough, Yonge Corridor, North York), than in northwest Metro, and also larger decreases in E.L.F. in the eastern inner Metropolitan areas (e.g. 20% for P.D.6).

P.D.2 (western Toronto)

There is a forecast 13% drop in E.L.F. for P.D.2. A 10% increase in employment results in a loss, nevertheless, in local origins to P.D.2 due to the decreasing E.L. F. and an increase in trips from further afield and mainly from P.D.1.

P.D.3 (mostly, City of York)

There is a forecast 9% fall in E.L.F. for P.D.3. There will be a loss of local (short distance) trips but a slight increase in trips to the growing employment areas of Vaughan and North York City Centre. Despite a slight increase in forecast employment (1,000 or 1%) for this zone, there will be a significant loss of Metro labour force which is compensated for by increases in commuters originating in Mississauga and Brampton. This results in an increase in the average trip length.

In summary, a forecast decline in E.L.F. of 11,000 (10%) and an increase of 1,000 jobs (1%) results in a net reduction in local trip making.

P.D.8 (central Etobicoke)

There is forecast, a 9% drop in E.L.F. for the zone and a loss of local trips to Etobicoke, Mississauga and P.D.3. An increase in employment in P.D.8 shows the increasing dependence on the growing Region of Peel labour force. In 1981, Peel/Halton residents held 26% of the jobs in central Etobicoke (P.D.8). This is forecast to increase to 39% by 2011.

In summary, with a forecast decline in E.L.F. of 9,000 (9%) and an increase in employment of 19,000 (29%), P.D.8 will, in the future continue to attract major increases in commuting from Peel Region, in particular.

P.D.9 (northern Etobicoke)

A small increase in E.L.F. is forecast for P.D.9 and a tendancy to travel to new jobs outside Metro is also indicated.

An increase in employment in P.D.9 shows, similarly as for P.D.8, an increasing dependance on the growing Peel (and also York) labour force. In 1981, 32% of the jobs in P.D.9 were taken by non-Metro residents. By 2011, this is forecast to increase to 46%.

In summary, with a forecast increase in E.L.F. of 2,500 (7%) and an increase in employment of 20,000 (34%) this area will attract a large increase in cross-boundary commuting from the Region of Peel primarily, but also the Region of York.

P.D.10 (western North York)

A declining E.L.F. is forecast which will result in a loss of local Metro trips (particularly intra-zonal) and an increase in trips to the growing employment in North York City Centre and Vaughan. Although the number of jobs in P.D.10 is forecast to increase by only 5%, there will be a significant change in travel patterns to this zone, with a loss of trips from all the immediate adjacent areas within Metro and a compensatory increase of trips from Peel and York Regions. This is due to the declining E.L.F. throughout most of this Metro area and the corresponding major increase in E.L.F. in the surrounding regions. This reliance on the outlying regional labour force is forecast to nearly double from 18% in 1981 to 34% in 2011.

In summary, due to a decrease in E.L.F. of 6,000 (8%) and despite only a small increase in employment, a large increase in commuting from York and Peel regions is forecast for this zone.

4.2.2 Metro Travel Demand Model

The Metro travel demand model was used to forecast future travel demand. The model made use of the M1-86 land use forecasts discussed in chapter 4.1.

The essential aim of this study is to identify the need for transportation improvements. With this in mind, a base-case network has been used for the forecasts, thereby assuming in the first instance, no improvements (other than those committed) to the transportation network. This will then show the effects of the changing land use only and not the effects of any possible changes in the transportation network. This is particularly important for this study as it obviates the need to second-guess any improvements and instead leads to identifying the need to carry out improvements.

Certain underlying inherent assumptions should be noted regarding the forecasts:

- Metro travel demand model is essentially a two-mode model (auto and transit) and does not, currently, explicitly forecast commuter rail (i.e. GO Transit) with the result that forecast future GO Transit ridership is unrealistically low;
- a gravity model is used for trip distribution which takes into account the changing distribution of employed labour force and employment. It does not take into account the possibility of localized severe congestion forcing a redistribution of travel patterns. In other words, the model does not check the ability of the transportation system to support the forecast land use;
- as a result of the previous point, together with the use of an all-or-nothing assignment algorithm, the model can (and often does) assign volumes to links (auto and transit) greater than the link capacity;

- the model uses peak hour factors derived from the 1979 Metro Toronto Travel Survey. It does not take into account the possibility of future changes in these factors due to increasing use of, for example, flexible work hours, technological changes, work at home, etc;
- the result of the last two points is that the model is effectively a forecaster of travel desire, assuming the availability of capacity to make a trip and the desire to make that trip in the peak hour, which is in essence, ideal for identifying 'need' rather than 'forced choice'; and
- the model forecasts a.m. peak hour travel (essentially 7:30 a.m. to 8:30 a.m.) although the p.m. peak hour is generally the higher peak in daily traffic. The a.m. peak hour is modelled because two trip purposes (i.e. home-to-work and home-to-school/university) make up the majority of trips which are generally stable trip purposes and hence easier to model, while the p.m. includes more random trip making types (e.g. shopping, entertainment, tourism, etc.) which of course are less stable and more difficult to model. The model explicitly simulates the home-to-work trips and a factor is added to account for the home-to-school/university and other trips. It should therefore, be noted, that as the number of school or university age (0-24 years) people in Metro is forecast to drop significantly over the next 25 years, the add-on factors for school trips (based on the 1979 travel survey) will undoubtedly be high, particularly in the inner Metropolitan areas. School trips are generally short distances, mostly on the arterial and local road systems and with a significant number made by transit; and therefore, should be kept in mind when reviewing these forecasts.

4.2.3 Future Change in Travel Demand by Screenline

Exhibit 11 identified the location of screenlines that were used to assess existing screenline capacities versus demand. Travel demand forecasts were summarized for these screenlines for 1991, 2001 and

2011. As stated in the previous chapter, the roadway and transit network that was used for the forecasting was essentially a base case 'do-minimum' network. This means that forecast modal splits will be generally the same as the 1981 simulation and that facilities (both auto and transit) have the possibility of being assigned to above capacity. In addition, it should be noted that because of the 'all-or-nothing' assignment and a 'do-minimum' network, it is possible that a significant O-D movement can be assigned to links not directly satisfying that movement. Hence the model can apparently show large increases in travel demand across a particular screenline, when in fact an improvement in the network elsewhere, could produce a large shift in assigned volume. The outbound direction is discussed for the first six screenlines only, i.e. where some growth is forecast. For subsequent screenlines, the outbound direction is either forecast to stabilize or decline.

Screenlines 1 and 2 (Peel/Metro Boundary, Highway 401 to the Lake)

The forecasts for the combined screenlines 1 and 2 show strong growth between 1981 and 1991 of 36% in total person trips; 22% growth between 1991 and 2001, and 14% between 2001 and 2011, resulting in a total growth of 34,000 person trips (88%).

It should be noted that the Metro travel demand forecasts (using the Metro land use forecast) have over-simulated Peel-to-Metro growth during the 1980's while under-forecasting York-to-Metro growth since 1981 (the base year for the model). The Metro land use forecasts are currently under review and changes may correct this aspect.

For the outbound direction, a declining travel demand for screenline 1 is forecast which is roughly comparable to cordon count trends since 1977, and for screenline 2 a slight increase in travel demand to 2001 and then a slight decline to 2011 is forecast which reflects the declining labour force of northwest Metro.

Screenline 3 (Peel/Metro Boundary, Airport Road to Steeles Avenue)

The simulation of inbound travel demand is shown to be quite good for both 1981 and 1985. The forecast growth is around 24% between 1981 and 1991 and also for 1991 and 2001, with a slowing of growth to 10% between 2001 and 2011, resulting in a total growth of 6,000 person trips (67%) up to 2011. Growth in the outbound direction is also shown to be strong for screenline 3, indicating more-or-less balanced traffic volumes across this screenline in the future as is the case today.

Screenline 4 (York/Metro Boundary, Albion Road to Humber River)

The forecast growth shows an increasing growth pattern (unlike the first three screenlines) from 14% from 1981 to 1991, 25% between 1991 and 2001 to 30% between 2001 and 2011, resulting in total growth of 5,000 person trips (95%) up to 2011. For the outbound direction, strong growth is forecast to 1991, but is followed by little growth after that time.

Screenline 5 (York/Metro Boundary, Humber River to CN Newmarket)

The forecasts show a strong, virtual linear growth from 1981 through to 2011 with a roughly 37% growth during each decade, resulting in a growth of 8,000 person trips (117%) up to 2011. For the outbound direction a strong growth to 1991 is forecast (which appears to be reflected in the cordon counts to 1985), followed by very little growth up to 2011. This indicates more or less balanced traffic volumes across this screenline up to 1991 followed by much greater increases in inbound commuting after that time.

Screenline 6 (York/Metro Boundary, CN Newmarket to CN Bala)

The forecast shows strong growth between 1981 to 1991 of 68% (which is currently being exceeded by the cordon counts), followed by 32% between 1991 and 2001 and 8% between 2001 and 2011, resulting in an increase of 12,000 person trips up to 2011. For the outbound direction some growth is forecast to 1991, but no growth thereafter. The inbound direction will obviously remain the peak direction with the difference becoming more pronounced.

Screenline 10 (Humber River, Dundas Street to the Lake)

A strong growth of 23% is forecast between 1981 and 1991 which appears to be occurring, followed by growths of 17% and 11% between 1991 and 2001, and between 2001 and 2011 respectively, resulting in a total increase of 18,000 person trips (57%) up to 2011. The high forecast growth is essentially a reflection of the strong Peel/Halton to P.D.1 growth being accommodated across this screenline by the QEW/Gardiner Expressway, the Bloor subway and the Lakeshore and Milton GO Train services. A rationalization of the 'all-or-nothing' assignment of nearly all the growth to this screenline regardless of whether the trip origin is in the west or northwest will have to be carried out at some later stage, to fully assess the nature of the needs of this large travel demand.

Screenline 11 (Humber River, Scarlett Road to St. Phillips Road)

There has been little growth (inbound) in trips crossing this screenline between 1975 and 1985. The forecasts show there to be only modest growth into the future 18% between 1981 and 1991, 8% between 1991 and 2001 and 6% between 2001 and 2011. A further rationalization of this growth is necessary as this screenline combines local arterial road traffic in the inner Metropolitan areas with inter-regional GO Train (Georgetown) ridership.

Screenline 12 (Highway 401, Humber River to CN Newmarket)

The forecast shows no growth across this screenline to 2011. This is also reflected in the cordon count trends since 1977.

Screenline 13 (Highway 401, CN Newmarket to CN Bala)

Recent growth across this screenline has been higher than that forecast possibly reflecting the underestimation of population growth in York

Region in M1-86 forecasts. The forecast shows significant growth of 11%, 8% and 3% in the three decades between 1981 and 2011 for an overall growth of 9,000 trips (26%) and reflects the growth in travel demand from the Region of York to the Central Area and Yonge Corridor in general.

Screenline 16 (CN Newmarket, CP North Toronto to Lake)

This screenline is essentially the same as screenline 10 only closer to the Central Area. The forecasts are showing greater growth than exhibited in recent cordon counts. Growths of 15%, 11% and 8% are shown for the three decades up to 2011 for a total growth of 19,000 person trips (38%).

Screenline 17 (CP North Toronto, CN Newmarket to CN Bala)

The forecasts show very little growth (1,000 trips or 2%) to 2011. The explanation for this, lies in the fact that, despite large increases in travel demand from York Region to the Central Area, there is a compensating decline in travel demand from Metro areas north and northeast of the Central Area. This could mean pressures being redistributed among facilities crossing this screenline however.

Screenline 19 (Highway 401, Peel/Metro Boundary to Humber River)

A steady, more-or-less linear growth is forecast for this screenline up to 2011 with a total growth of 3,000 trips (17%) between 1981 and 2011. As would be expected, the major part of this growth is forecast to be on Highway 427, primarily due to the large population growth expected for Brampton.

Screenline 20 (Humber River, Highway 401 to Steeles Avenue)

The forecasts indicate continuing growth, similar to that witnessed by the 1975 to 1983 cordon counts with most of the growth, according to the all-or-nothing assignment, occurring on Highway 401 (capacity permitting). The forecast growth is 21%, 12% and 10% respectively for each decade between 1981 and 2001, resulting in a total growth of 10,000 trips (47%) in that period.

Screenline 21 (CN Newmarket, CP North Toronto to South of Highway 401)

The forecasts show virtually no growth through to 2011 (500 trips or 8%). This is undoubtedly due to there being a fall of E.L.F. in this inner area of Metro and only modest employment growth.

Screenline 22 (CN Newmarket, Highway 401 to Steeles Avenue)

The forecasts indicate similar growth to that shown by recent cordon counts. The apparent slowing down of growth shown in the 1983 and 1985 cordon counts could be due to the volatile nature of counts on Highway 401 due to level of service 'F' traffic conditions. The growth is forecast to be 23%, 7% and 7% respectively for each of the decades between 1981 and 2011 resulting in a total growth of 9,000 trips (33%).

Screenline 27 (Eglinton, Humber River to CN Newmarket)

The forecasts for this screenline show virtually the same picture as that for screenline 12, immediately above it, i.e. very little growth; 400 person trips (6%) between 1981 and 2011.

Screenline 28 (Eglinton, CN Newmarket to CN Bala)

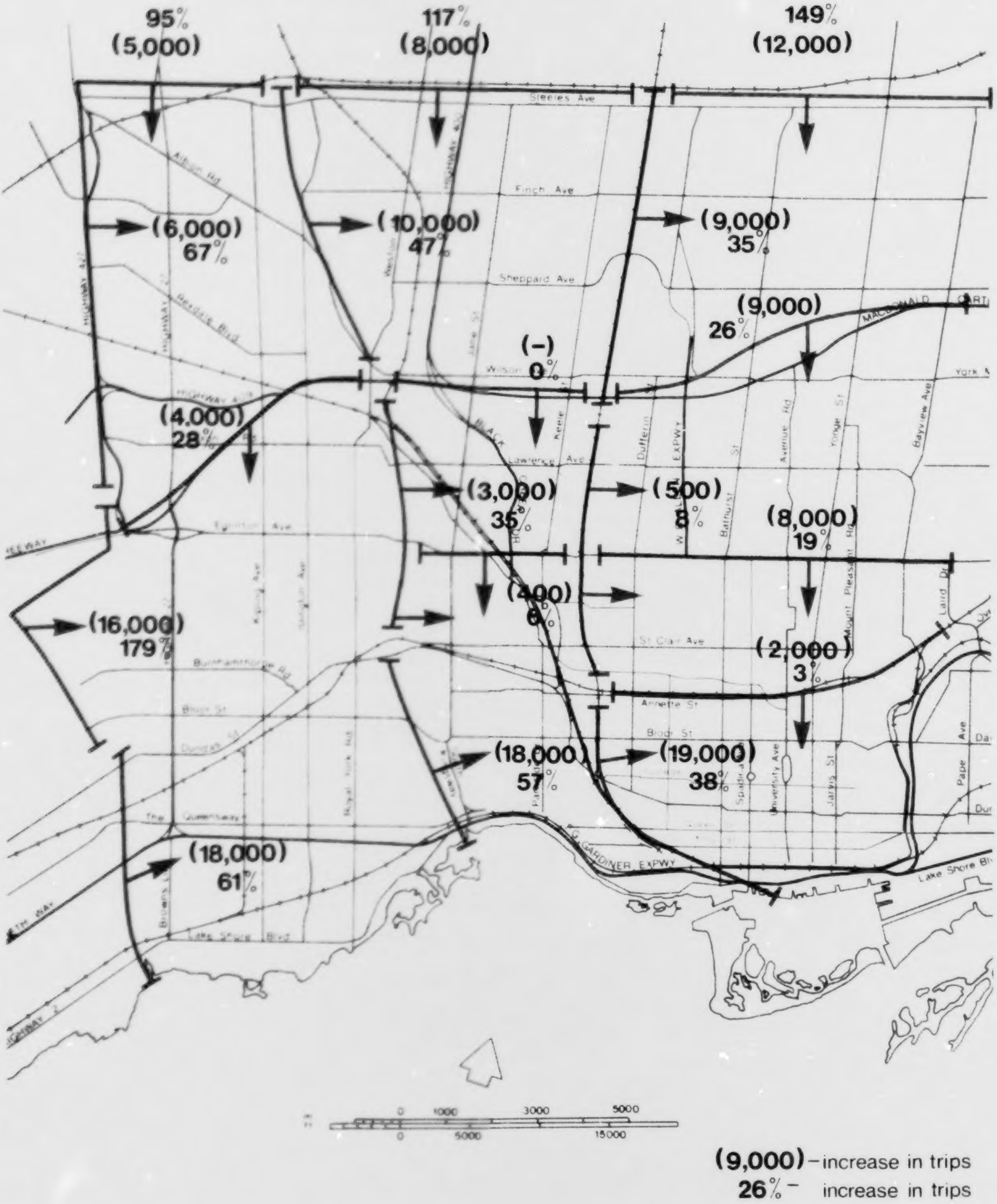
Recent recorded growth appears to be greater than that forecast. Forecast growth is for 6%, 6% and 7% respectively for each decade between 1981 and 2011 resulting in a total growth of 8,000 trips (19%) up to 2011.

4.2.4 Forecast Overview

This section presents an overview of the travel demand forecasts in order to highlight the main consequences of the forecast future land-use and also to point out the relevance to issues associated with the northwest study area.

A screenline summary of forecast inbound growth is shown in Exhibit 18. The following conclusions can be drawn from the forecasts:

- The major growth is forecast to continue to be inbound at the Metro boundary and in particular:
  - Peel/Metro boundary (Highway 401 to Lake); and
  - York/Metro bounary (Dufferin Street to Bayview Avenue);
- home-to-work trip lengths are forecast to increase significantly due to the growing distance between Metro jobs and the growing regional labour force;
- growth in outbound traffic only significant for north Etobicoke (screenlines 3 and 4) where inbound and outbound stay roughly equal, otherwise outbound growth is generally little to 1991 and no growth forecast beyond 1991 (the peak in the outbound direction could well be between 1991 and 2001, i.e. a few years after Metro E.L.F. peaks);
- main growth into Central Area is from Peel/Halton followed in magnitude by York and Durham respectively;
- no growth from Metro (other than P.D.1) to the Central Area and in many areas a decline is forecast due to between 10% and 20% fall in population and employed labour force in some of the more mature areas of Metro;
- major growth forecast for the Lakeshore corridor (subject to further refinement of all-or-nothing assignment);
- no growth (or decline) forecast for roads and transit in inner Metropolitan areas;
- significant growth (but smaller than cross-boundary growth) forecast for Highway 401 screenline; little or no growth forecast for C.P. North Toronto subdivision; and
- significant growth forecast across Humber River and CN Newmarket screenlines (Highway 401 to Steeles Avenue); growth mainly on Highway 401 (subject to further refinement).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(5,000)
117%
(8,000)
149%
(12,000)
Steeles Ave
Albion Rd
Finch Ave
(6,000)
67%
(10,000)
47%
(9,000)
35%
Sheppard Ave
(9,000)
26%
MACDONALD CARTIER
Highway 427
Highway 27
Rexdale Blvd
Weston
Highway 400
Jane St
(-)
0%
Wilson
York Mills
Highway 401
(4,000)
28%
Black Creek
Keele
Lawrence Ave
Dufferin
W. R. Allen EXPWY
Bathurst St
Avenue Rd
Yonge St
Bayview Ave
(3,000)
35%
(500)
8%
(8,000)
19%
Expressway
Eglinton Ave
Kipling Ave
Islington Ave
Mount Pleasant Rd
Laird Dr
(400)
6%
(16,000)
179%
St Clair Ave
(2,000)
3%
Burnhamthorpe Rd
Annette St
Bloor St
Dundas St
Royal York Rd
Jane St
(18,000)
57%
(19,000)
38%
Parkside
Spadina
University Ave
Jarvis St
Pape Ave
Danforth
The Queensway
(18,000)
61%
F.G. GARDINER EXPWY
Lake Shore Blvd
Browns Line
Highway 2
Queen Elizabeth Way
0 1000 3000 5000
0 5000 15000
(9,000) - increase in trips
26% - increase in trips

EXHIBIT 18:
FORECAST GROWTH IN PERSON TRIPS BY SCREENLINE
(1981–2011) A.M. PEAK HOUR

The essential implication of these forecasts for this study area (bearing in mind the change in demographic and trip distribution outlined earlier in this section) is the following:

- **the justification for making improvements to the transportation system in northwest Metro due to growth in travel demand is based almost entirely on the need to facilitate the movement of non-Metro residents to Metro jobs.**

4.2.5 Sensitivity of Travel Demand Forecasts

The 2011, 24 hour home-to-work trip linkages for the G.T.A., using the three previously discussed land use forecasts, are shown in Table 4.4. The 24 hour home-to-work linkages can be seen to range from a low of 1,787,198 (M1-86) to a high 2,022,527 (M.T.O. high growth), 13% higher. The home-to-work linkages which will be most critical to this study will be the 'west' and 'north' to Metro trips having significance for the inter-regional travel and access to the Central Area issues in particular. The range of peak hour trips from the west (Peel/Halton) to Metro vary between a low of 147,398 (Mod. 'A') to a high of 174,048 (M1-86), 18% higher. The M.T.O. low and high growth forecasts are extremely close to these two limits. In terms of peak hour forecasts from the west to Metro, this results in a range of between 80,000 to 90,000 person trips. The range of 24 hour work trips from the north (York Region) to Metro is between 109,976 (M1-86) and 147,311 (M.T.O. high), 33% higher. This is a much wider range and hence indicates a greater sensitivity to the forecast E.L.F. for York Region. It should be added that the other two forecasts are nearer to the middle or higher end of this range.

TABLE 4.4

SENSITIVITY OF LAND USE FORECASTS

FORECAST 24 HOUR HOME-TO-WORK TRIPS

LAND USE	FROM/TO	METRO	NORTH	EAST	WEST	TOTAL
M1-86	Metro	839,003	66,678	6,139	51,150	962,970
	North	109,976	104,084	988	12,240	227,288
	East	32,914	7,333	16,061	1,128	56,436
	West	174,048	19,938	397	346,121	540,504
	Total	**1,155,941**	**197,033**	**23,505**	**410,639**	**1,797,198**
M.T.C. (Low)	Metro	931,485	52,388	4,834	62,150	1,050,856
	North	128,658	137,319	943	11,670	278,590
	East	33,342	3,303	20,318	1,183	58,147
	West	153,777	9,107	781	316,385	480,050
	Total	**1,247,262**	**202,116**	**26,877**	**391,389**	**1,867,644**
M.T.C. (High)	Metro	963,702	58,591	5,280	61,960	1,089,534
	North	147,311	170,730	1,164	13,224	332,429
	East	38,071	4,042	24,519	1,261	67,894
	West	172,390	10,581	920	348,780	532,670
	Total	**1,321,474**	**243,943**	**31,884**	**425,225**	**2,022,527**
GO-ALRT 'A'	Metro	854,601	63,230	7,078	83,379	1,008,288
	North	125,430	112,085	1,879	20,421	259,815
	East	27,239	3,720	18,012	1,347	50,318
	West	147,398	12,892	294	425,726	586,310
	Total	**1,154,668**	**191,927**	**27,263**	**530,873**	**1,904,731**

Note: North - York Region
West - Peel/East Halton
East - Pickering/Ajax

5.0 SPECIFIC PROBLEM AREAS AND DEFICIENCIES

Chapter 2.0 of this report described the process of identifying specific problem areas and deficiencies for review as part of the study. Essentially this was carried out by the study team initially identifying concerns and then discussing these with the Working Committee to establish a concensus on those issues that should be investigated in detail. The resulting list of concerns was as follows:

- Declining Transit Speeds;
- Inter-Regional Travel Issues;
- Access into the Central Area;
- Effects of Highway 407;
- Eglinton Corridor Needs;
- Transit Access to Pearson International Airport and York University;
- The Need for Rapid Transit Corridors Serving the Northwest;
- Road System Discontinuities/Bottlenecks;
- Needs of the Goods Movement Industry; and
- Support of Development in Northwest Metro.

A working paper was then prepared for each of these ten issues. These papers are included in a separate technical appendix. Each of the papers is discussed in summary in the following sections.

5.1 DECLINING TRANSIT SPEEDS

The assessment of the issue of declining transit speeds was complicated by the lack of comprehensive historic data documenting the actual reduction of transit speeds due to increasing road congestion. The reasons for this lack of data are:

- transit route configurations change over time;
- actual running speeds have not been surveyed on a regular basis (neither auto nor transit); and

- scheduled operating speeds, whilst readily available, do not always reflect, either the presence of congestion or increasing congestion.

The first two points are self explanatory. The last point needs some explanation. For example, when a bus service is initiated, there is often 'slack' built into the round trip time. As congestion builds on such a route, the slack will slowly get used up, but no alteration need be made to the operating schedule. Therefore, over a period of time it will appear, upon examination of the operating schedules, increasing traffic volumes have not had an impact on transit operations. Also, scheduling requirements result in changes in scheduled round trip times which can result in apparent increases in operating speeds. These requirements relate to changes in headway or the need to blend different branches of the same service. A brief examination of historic scheduled operating speeds confirmed the unreliability of these data as an indicator of the effects of traffic congestion on transit operating speeds. No consistent trends were evident, and in some cases scheduled operating speeds increased due to scheduling factors, while traffic volumes were also increasing.

The issue of declining transit speeds was therefore addressed using the most appropriate data available and on the basis of 'reasoned judgement' where necessary.

The 1983 T.T.C. Long Range Plan identified traffic congestion as a growing problem which would result in a considerable decline in surface transit speeds, leading to increased transit capital and operating costs, and reduced productivity and service efficiency. Since that time, the T.T.C. Service Planning Department has produced an annual report summarizing the impact of traffic congestion on their surface transit operations. Table 5.1 summarizes the findings of these reports for the peak periods only. The T. T.C. reports also detail congestion effects for off-peak and weekend periods. No information is available

TABLE 5.1

T.T.C. ROUTES IMPACTED BY CONGESTION IN THE PEAK PERIODS (1984 - 1986)

YEAR	A.M. PEAK	P.M. PEAK
1984	Bathurst + 1 bus	Bathurst + 1 bus
		Carlton
1985	Wilson + 3 buses	Alness + 1 bus
		Wilson + 2 buses
		King
		Sheppard East
	Finch East + 2 buses	Finch East + 1 bus
1986	Sheppard East + 1 bus	Sheppard East + 1 bus
		Steeles West + 1 bus
	Finch West + 2 buses	Finch West + 1 bus
	Kipling	Bay
	Carlton	Carlton
	King	
	Eglinton East	Eglinton East

Note: (1) All routes mentioned in above table experienced an increase in running time and hence headway, unless, where noted, extra vehicles were added, in which case the headways were either maintained or reduced.

(2) T.T.C. reports also included congestion effects for other time periods, but these are not presented here

Source: T.T.C. Service Planning Department regarding the congested section(s) of each route which contributed to the necessary increase in route time. It is somewhat difficult to spot any trend or bias in the effected routes.

A detailed assessment of cordon count trends and volume/capacity data was carried out to determine whether any correlation could be made between this data and past trends in transit speeds. However, these data sets are limited in their geographical coverage and in addition, a clear insight into past trends in transit speeds cannot be provided without a clearer understanding of the interaction of general traffic and transit vehicles on different types of roads. There does appear to be some support for a relationship between auto and traffic conditions in that small increases in traffic volumes where the v/c relationship is high, appears to have more effect than large volume increases in areas where the v/c ratio is low.

Exhibit 15 illustrates a sample of the current scheduled operating surface transit speeds in Metro. This shows the scheduled operating surface transit speeds in the inner Metropolitan area and particularly those inner area routes in the northwest study area are currently the slowest in Metro. The roadways in the inner Metropolitan areas are built to a lower standard than those in the outer areas and have the least chance of offering operational improvements to transit services because of the physical restrictions due to the narrower rights-of-way.

In recent years the only inner area routes for which congestion effects have been recorded have been the Bay trolley bus and the Queen and King Streetcar routes (and also the Carlton Streetcar service which is not in the study area). It appears that other routes in the inner area and within the study area have been some of the slowest services for some time and have not changed significantly due to modest increases in traffic volumes over recent years. Attempting to project future trends in transit speeds in the inner Metropolitan area cannot be done with any confidence. This is an area of declining population and modest employment growth, but is also close to the burgeoning Central Area. The best postulation would appear to be that transit routes terminating in the Central Area in the vicinity of the high growth nodes (e.g. Railway Lands, Massey Ferguson, etc.) could well see a further decline in operating speed while those operating through areas of marked decrease in population could see improvements in operating speed. When a route operates through both such areas, the outcome is unclear. A drop in population could mean a reduction in required transit capacity and hence headway, while increased employment in the Central Area could lower overall route speed.

The high standard of the arterials in the outer Metropolitan areas currently provides for the faster scheduled services in Metro. Certain of these arterials (e.g. Steeles Avenue) are programmed to be widened in the coming years, which should improve transit speeds. Traffic volumes have increased rapidly in the outer Metropolitan areas particularly in the vicinity of the boundary and routes such as Steeles West, Finch West, Wilson and Kipling have all experienced an increase in round trip time in recent years.

It is not certain, but nevertheless quite possible, that routes in the outer areas could drop to a level similar to the inner Metropolitan areas. It is clear that routes in these areas have been impacted the most over the last ten years, and forecasts show that these outer Metropolitan areas will continue to experience major increases in travel demand for many years to come. However, there is also greater potential to improve conditions in these outer areas through widenings and implementation of transit priority measures which would have less of an impact on traffic operations as compared with roads in the inner Metropolitan area.

From the preceeding discussion, the following conclusions can be drawn:

- Surface transit scheduled operating speeds in the inner urban area and particularly in the inner area of northwest Metro are currently the slowest in Metro;
- Surface transit routes within the inner area of the northwest study area, have been some of the slowest services for some time and have not changed significantly in recent years due to only modest increases in traffic volumes (in these areas); and
- Attempting to project future trends in transit speeds for specific routes cannot be done with any confidence. As a link approaches capacity, an increase in traffic volume has a much greater impact on speed than when the link is well below capacity.

It is generally recognized that the reasons for delays to T.T.C. services vary considerably depending on a larger list of factors and furthermore that detailed "speed/delay" surveys are required before any attempt can be made to prescribe solutions. Such surveys are not normally done by the T.T.C. on a regular basis because they are relatively expensive undertakings.

As it was impractical to undertake surveys for each route in the study area, it was decided, in keeping with the general intent of this phase of the study, to identify a short list of candidate routes for more detailed study. A simple screening procedure was devised using data that was readily available. The variables that were considered are listed below:

1. Average scheduled speed;
2. Vehicle frequency (vehicles per hour);
3. Route/road section length;
4. Passenger unit time; and
5. Total passenger time.

The first screen involved identifying those routes or sections of road where 20 or more T.T.C. vehicles are scheduled during the morning peak hour. This produced an initial list of 31 routes or road sections.

The next screen involved eliminating those routes which had a scheduled speed higher than the system average of approximately 19 km/h. This resulted in reducing the list to 17 routes or road sections (see Table 5.2).

The third screen involved the elimination of routes or road sections which were short in length on the grounds that the ability to significantly decrease transit time as a result of increased speeds on those sections would be limited.

Nine routes or road sections (see Table 5.3) then remained, two of which are already the subject of studies at present and would therefore be excluded from any Phase 2 study. These routes are the Spadina bus route, which has been proposed for upgrading to LRT and Queen Street which has been the subject of a recently completed transit priority study involving T.T.C. and Metro staff.

The remaining seven routes, which are included in Table 5.3, are considered to offer the best potential of the routes in the study area to reduce T.T.C. costs and passenger trip time. Therefore, these routes should be examined in more detail to determine the most effective ways of increasing transit speeds. Recognizing that the implementation of transit priority measures can potentially impact negatively on the flow of other traffic, other physical and operational improvements (such as intersection improvements and adjustments to traffic signal timings) which would improve overall traffic operations should also be considered.

5.2 INTER-REGIONAL TRAVEL ISSUES

The assessment of inter-regional travel issues was carried out by (i) reviewing current and projected volumes and capacities at both the Peel/Metro boundary and the York/Metro boundary and (ii) documenting

TABLE 5.2

RANKING OF T.T.C. ROUTE SEGMENTS

AFTER SECOND SCREENING

Road	Section	Mode	Average Speed (kpm)	Length (KM)	Vehicle (PK HR)	Vehicle Load	Passenger Time
Bathurst St.	Front to Wilson	Mixed	16.0	12.0	27	60	45
Wilson Avenue	Bathurst to Walsh	Bus	16.0	8.5	55	60	32
Dufferin St.	Springhurst to Roselawn	Bus	17.5	8.0	25	60	27
Eglinton Ave. W	Avenue to Keele	Bus	15.0	6.0	34	60	24
King St. W	Roncesvalles to University	S'car	16.0	5.5	22	75	21
Queen St. W	Roncesvalles to McCaul	S'car	14.0	5.0	24	75	21
Ossington	Queen to Davenport	Trolley	16.5	3.5	33	60	13
Spadina	Wellington to Bloor	Bus	12.0	3.0	46	60	15
St. Clair	Bathurst to Lansdowne	Mixed	16.0	3.0	38	75	11
Roncesvalles	Queen to Dundas	S'car	15.0	2.0	22	75	8
Vaughan Road	St. Clair to Jesmond	Bus	18.5	2.0	23	60	6
Dundas St. W	College to Bloor	S'car	12.5	1.5	41	75	7
Lansdowne	Bloor to Davenport	Mixed	15.0	1.5	21	60	6
Islington Ave.	Albion to Finch	Bus	18.0	1.0	25	60	3
Howard Park	Dundar to Parkside	S'car	15.5	0.5	20	75	2
Oakwood Ave.	Davenport to St. Clair	Bus	16.5	0.5	24	60	2
Shaw St.	King to Queen	Trolley	16.5	0.5	24	60	2

TABLE 5.3

RANKING OF T.T.C. ROUTE SEGMENTS BY TOTAL PASSENGER TIME

ROAD	SECTION	MODE	AVERAGE SPEED (Kph)	LENGTH (KM)	VEHICLE (PK.HR)	VEHICLE LOAD	PASSENGER TIME	
							UNIT (Min)	TOTAL (Hrs)
Wilson Avenue	Bathurst to Walsh	Bus	16.0	8.5	55[2]	60	32	1753[2]
Bathurst Street	Front to Wilson	Mixed	16.0	12.0	27	60	45	1215
Eglinton Ave.W.	Avenue to Keele	Bus	15.0	6.0	34	60	24	816
Spadina[3]	Wellington to Bloor	Bus	12.0	3.0	46	60	15	690
Dufferin St.	Springhurst to Roselawn	Bus	17.5	8.0	25	60	27	686
Queen St.W.[3]	Roncessvalles to McCaul	S'Car	14.0	5.0	24	75	21	643
King St. W.	Roncessvalles to University	S'Car	16.0	3.0	38	75	11	534
St. Clair W.	Bathurst to Lansdowne	Mixed	16.0	3.0	38	75	11	534
Ossington	Queen to Davenport	Trolley	16.5	3.5	33	60	13	420

Notes:

(1) Total passenger time is calculated as follows:
Route section length/Average speed x vehicles (pk.hr.) x vehicle load

(2) The 55 vehicles per hour for the Wilson route is only valid for the Bathurst to Dufferin section. West of Dufferin there are 32 buses in the peak hour. A recalculation of total passenger time reflecting the different route section densities gives a result of 1192 hours. The Wilson route would therefore be second in the ranking.

(3) Spadina and Queen Street West are currently the subject of specific study

specific problem locations/issues that were highlighted through discussion with the Working Committee.

5.2.1 Peel/Metro Boundary

Approximately half of the Peel/Metro boundary (i.e. between Burnhamthorpe Road and Lake Ontario) is not in the study area. However, because of the wide choice of alternative routings available across the boundary, it was considered necessary to examine the entire boundary during the course of this study. In this regard, it should be noted that the West Metro Boundary Transportation Review was completed by Metropolitan and T.T.C. staff in May, 1986 and that study has provided background data for this current analysis. (The West Metro Boundary Transportation Review has not yet been considered by Metropolitan Council pending receipt of comments from all affected agencies).

Table 5.4 shows the changes in a.m. peak period (7:00 a.m. to 9:00 a.m.) auto vehicle trips across the Peel/Metro boundary between 1975 and 1985. This table shows that the growing population, west of Metro, commuting to the growing job market in Metro, resulted in an increase of 22,900 vehicles crossing the Peel/Metro boundary. It is also of note that the equivalent increase at the Humber River was only 9,100; a difference of 13,800. In other words, only 40% of the increase at the Peel/Metro boundary was witnessed at the Humber River.

To examine the extent of the impact of this large percentage (60%) of auto traffic having destinations west of the Humber River, it is only necessary to look at where the employment concentrations are in Etobicoke to determine the penetration on arterial roads within Etobicoke. The main employment areas in Etobicoke are:

- most of the area south of Dundas and Bloor Street and west of Islington;
- the area between the West and East Mall (i.e. either side of Highway 427); and

TABLE 5.4

INCREASE IN A.M. PEAK PERIOD (7-9 a.m.)

AUTOS/TAXIS (INBOUND)

ACROSS PEEL/METRO BOUNDARY

Screenline	Link	1975	1985	1975-1985 (Increase)	
1. Dundas Street to Lake Ontario	Lakeshore	2,025	2,808	783	
	Q.E.W.	11,368	14,958	3,590	
	Queensway	1,176	3,887	2,120	
	Dundas	1,974	1,990	16	
	Sub-Total	17,134	23,643	6,509	(38%)
2. Highway 401 to Bloor St.	Bloor Street	2,110	2,595	485	
	Burnhamthorpe	1,978	3,747	1769	
	Eglinton Avenue	1,281	3,209	1,928	
	Highway 401	4,635	10,538	5,903	
	Sub-Total	10,004	20,089	10,085	(101%)
3. Steeles Ave. to Airport Rd.	Airport Service Road	384	251	-133	
	Airport Expressway	700	788	88	
	Airport Road	1,979	2,000	21	
	Rexdale Boulevard	1,635	2,374	799	
	Morningstar Drive	1,276	724	-552	
	Steeles Avenue	1,002	1,659	657	
	Fasken Drive	164	493	329	
	Disco Road	-	1,152	1,152	
	Highway 409	-	1,257	1,257	
	Darcel/Finch	-	2,698	2,698	
	Sub-Total	7,140	13,396	6,256	(88%)
Peel/Metro Boundary Total		34,278	57,128	22,850	

o the western and southern portions of north Etobicoke.

Most of the auto traffic destined east of the Humber River will likely be using either the QEW/Gardiner Expressway or Highway 401. This is exemplified by a recent study carried out by the City of Toronto, which found that 70% of the a.m. eastbound traffic exiting from the Gardiner via the Central Bayfront ramps originated west of Metro's boundary. The lack of continuity of arterial roads crossing the Humber River, particularly towards north Etobicoke, would have the effect of attracting traffic to Highway 401 for most cross-Humber trips. These hypotheses of expressway use are also confirmed by examination of cordon count trends which shows roughly half the recent auto growth across the Humber River to be on Highway 401 and the QEW/Gardiner Expressway (plus Lake Shore Boulevard, due to capacity conditions on the Gardiner).

A review of capacities at the Peel/Metro boundary was carried out and this was related to the 1985 volumes. Table 5.5 shows the 1985 volume/capacity data for the Peel/Metro boundary. Essentially, all roads between Burnhamthorpe and Lakeshore are shown to be operating at, or near to, capacity. Eglinton Avenue and Highway 401 are approaching capacity (the 1985 count on Highway 401 was low due to construction), while many of the roads above Highway 401 are currently operating well under capacity.

Projections of future travel demand across the Peel/Metro boundary were assessed and it was determined that screenlines 1 and 2 (when combined) would be subject to demands well in excess of the existing capacity. In order to demonstrate the extent of this potential problem, an analysis was carried out to determine how great a change in modal split must be accomplished to handle the projected demand if no increase in roadway capacity is provided. Depending on which land use forecast is used (M1-86 is the highest, Peel's GO-ALRT is the lowest), it

TABLE 5.5
VOLUME/CAPACITY ANALYSIS ACROSS PEEL/METRO BOUNDARY
A.M. MAXIMUM HOUR

SCREENLINE	# LANES 2-Way	CAPACITY (V.P.H.)		COUNT (1985)		V/C	
		IN	OUT	IN	OUT	IN	OUT
#1							
Lakeshore	4	1,950	1,950	1,857	425	0.95	0.22
Q.E.W.	8	8,200	8,200	8,144	4,319	0.99	0.54
Queensway	4/6	2,800	2,800	2,436	606	0.87	0.22
Dundas Street	4/6	1,560	1,560	1,342	1,166	0.86	0.75
Total		14,510	14,510	13,779	6,516	0.95	0.45
#2							
Bloor	4	1,700	1,700	1,598	355	0.94	0.22
Burnhamthorpe	4	2,200	2,200	2,202	918	1.00	0.42
Eglinton	4	2,340	2,340	1,937	1,156	0.83	0.49
Highway 401	16	14,000	14,000	6,781	5,805	0.48	0.41
Total		20,240	20,240	12,518	8,234	0.62	0.41
#3							
Airport Road	6	2,850	2,850	1,428	1,474	0.50	0.52
Highway 409	6	1,200	2,850	806	2,301	0.67	0.81
Goreway/Disco	4	1,560	1,560	749	279	0.48	0.18
Rexdale	6	2,850	2,850	1,618	1,490	0.57	0.52
Morningstar	2	500	500	456	214	0.91	0.43
Finch	4	1,950	1,950	1,606	466	0.82	0.24
Steeles	4	1,950	1,950	1,036	599	0.53	0.31
Total		12,860	14,510	7,699	6,823	0.60	0.47

was determined that the transit modal share would need to be as follows:

Year	Transit Modal Share Requirement (assuming no increase in roadway capacity)
1991	27% - 32%
2001	38% - 44%
2011	46% - 51%

(The 1985 observed a.m. peak hour modal split was 27%).

If potential road improvements were made (i.e. Lakeshore and Burnhamthorpe widening on both sides of the boundary, Dundas and Queensway on the Mississauga side and completion of Rathburn), the target transit modal share requirements would be reduced by a maximum of 8% (i.e. 38% -43% for 2011).

Specific problem locations/issues at the Peel/Metro boundary were identified. These are listed below:

- low auto speeds between the boundary and Highway 427 along Eglinton and Burnhamthorpe, higher speeds observed east of Highway 427 which highlights the important distribution role of the expressway for a large proportion of inter-regional trips;
- Eglinton/Renforth intersection currently at capacity (high number of left turns, 45% of eastbound traffic);
- Burnhamthorpe/West Mall intersection currently at capacity;
- roads traversing Peel/Metro boundary rated as being close to, or at capacity from Burnhamthorpe to Lakeshore Boulevard;
- an estimated 72% of transit ridership crossing Peel/Metro boundary is destined to the Toronto Central Area, as current transit services focus on the Bloor subway;
- transit modal split for relatively short distance trips (into Metro) is extremely low (less than 10% and close to 0% for some areas);and

- closed door transit service operated in Metro by Mississauga Transit is perceived as a nuisance by Etobicoke residents.

The location of Highway 427 east of the Peel/Metro boundary exacerbates the problems associated with the municipal boundary as this expressway is a major distributor of trips to all parts of Metro. The congestion experienced immediately west of Highway 427 is that which would normally be expected on arterial roads at right angles to an expressway.

5.2.2 York/Metro Boundary

As with the Peel/Metro boundary investigations, it was necessary to consider parts of screenlines that were beyond the formal limits of the study area. Specifically parts of screenline #6 extend to the east of the study area.

Table 5.6 shows the changes in a.m. peak period (7:00 a.m. to 9:00 a.m.) auto vehicle trips across the westerly half of the York/Metro boundary between 1975 and 1985. This table shows that the growing population, north of Metro, commuting to the growing job market in Metro, resulted in an increase of 15,000 vehicles crossing the western and central portions of the York/Metro boundary. It is also of note that the equivalent increase immediately north of Highway 401 was 9,000. In other words, 60% of the increase at the York/Metro boundary manifested immediately north of Highway 401. Sixty percent is undoubtedly a high estimate of the extent of the impact in increased inter-regional travel as the increase in auto volumes at Highway 401 will undoubtedly contain some increase in southbound North York commuters as the North York E.L.F. increased during this period. In addition, some of the increase across screenline 19 (north of Highway 401 from Etobicoke Creek to Humber River) will have first crossed the Peel/Metro boundary and not the York/Metro boundary. If screenlines 4 and 19 are excluded from the analysis, the increase of auto traffic across screenlines 5 and 6 (York/Metro boundary) between 1975 and

TABLE 5.6

INCREASE IN A.M. PEAK PERIOD (7-9 a.m.)

AUTOS/TAXIS (INBOUND)

ACROSS YORK/METRO BOUNDARY WEST OF BALA SUBDIVISION

Screenline	Link	1975	1985	1975-1985 (Increase)	
4. Highway 50 to Humber River	Highway 50	1,335	2,807	1,472	
	Highway 27	1,646	2,330	684	
	Sub-Total	2,981	5,137	2,156	(72%)
5. Humber River to CN Newmarket Subdivision	Islington Avenue	701	1,329	628	
	Pine Valley Drive	179	1,129	950	
	Weston Road	451	1,156	705	
	Highway 400	4,001	7,430	3,429	
	Jane Street	715	1,078	363	
	Keele Street	998	1,110	112	
	Sub-Total	7,045	13,232	6,187	(88%)
6. CN Newmarket Subdivision to CN Bala Subdivision	Dufferin Street	889	2,454	1,565	
	Bathurst Street	808	2,436	1,628	
	Yonge Street	2,123	2,823	700	
	Henderson Avenue	234	296	62	
	Bayview Avenue	1,575	2,601	1,026	
	Lauraleaf Road	197	287	90	
	Sub-Total	5,826	10,897	5,071	(87%)
York/Metro Boundary Total (North of Steeles Avenue)		15,852	29,266	13,414	(85%)

1985 is 11,000 and below this, screenlines 12 and 13 immediately north of Highway 401 is 5,000, i.e. 45% of the increase at the boundary.

A review of capacities at the York/Metro boundary was carried out and this was related to the 1985 volumes. Table 5.7 shows the 1985 volume/capacity ratios for the York/Metro boundary for both inbound and outbound directions. The inbound direction is shown to be the peak direction for all links with the exception of Keele Street which directly serves the Langstaff CN Freight Yard and surrounding industrial area. The critical section currently can be seen to be the central section (Dufferin Street, Bathurst Street, Yonge Street and Bayview Avenue), not all of which are in the study area. Not only is the boundary at (or near) capacity in this area, but also data provided by the Traffic Control Centre showed the intersections of Dufferin/Steeles, Dufferin/Finch and Finch/Bathurst to be virtually at capacity (v/c over 0.9) and Bathurst/Steeles to be near capacity (v/c over 0.8).

Projections of future travel demand across the York/Metro boundary were assessed. This assessment indicated the following:

o At screenline #4 the forecast shows sufficient existing capacity to cope with demand to somewhere between the early 1990's and the end of the century. Highway 427 is programmed to be extended to Highway 7 in the next 5 years which would virtually double existing capacity. In addition, the possibility exists to widen Highway 50 and Highway 27 (which will be widened in some sections in Metro) and also to extend Kipling Avenue north of Steeles Avenue. There then appears to be sufficient potential capacity to accommodate even the high-growth forecasts of MTO up to the year 2011;

o At screenline #5 the adjusted forecast shows there to be sufficient existing capacity to cope with demand until 1995 at the very earliest (MTO high-growth) or 2011 (M1-86) at the latest. MTO has plans to widen Highway 400 to 10 lanes in the next 6 years as

TABLE 5.7

VOLUME/CAPACITY ANALYSIS ACROSS YORK/METRO BOUNDARY A.M. MAXIMUM HOUR

SCREENLINE	# LANES	CAPACITY (V.P.H.)		COUNT (1985)		V/C	
	2-Way	IN	OUT	IN	OUT	IN	OUT
#4							
Highway 50	4	1,950	1,950	1,712	536	0.88	0.27
Highway 27	4	2,730	2,730	1,600	611	0.59	0.22
Martin Grove	4	800	800	108	106	0.14	0.14
Total		5,480	5,480	3,420	1,253	0.62	0.23
#5							
Islington Avenue	4	1,560	1,560	823	317	0.53	0.20
Weston Road	4	1,950	1,950	713	264	0.37	0.14
Highway 400	8	8,000	8,000	4,778	2,463	0.60	0.31
Jane Street	4	1,560	1,560	740	614	0.47	0.39
Keele Street	4	1,950	1,950	755	755	0.39	1.00
Total		15,020	15,020	7,809	5,642	0.52	0.38
#6							
Dufferin Street	4	1,560	1,560	1,470	634	0.94	0.41
Bathurst Street	4	1,560	1,560	1,502	789	0.95	0.51
Yonge Street	6	2,280	2,280	1,904	946	0.84	0.41
Bayview Avenue	4	1,560	1,560	1,544	868	0.99	0.56
Total		6,960	6,960	6,420	3,237	0.92	0.47

part of the phasing for construction of Highway 407. It is also possible to widen Jane Street, Keele Street and Islington Avenue, all to 6 lanes, on both sides of the boundary. With this potential increase in capacity the high growth forecast would be catered for until 2001. All other forecasts would be catered to up to 2011 without any further modal shift to transit; and

- At screenline #6 the roads crossing the screenline are all shown to be currently at or very close to capacity. There is the possibility of widening Dufferin Street, Bathurst Street and Bayview Avenue on either side of the boundary. This would accommodate approximately three, four or five years of the high growth forecast for this screenline irrespective of which forecast is considered. It is clear that transit initiatives will be required in the near future to accommodate the steady high growth in travel demand expected for this screenline as there would appear to be no further opportunities for additional road capacity beyond those mentioned.

Specific problem locations/issues at the York/Metro boundary were identified. These are listed below:

- central section of boundary (Dufferin to Bayview) currently at, or near, capacity. Of this section, Dufferin and Bathurst are in the study area;
- intersections of Dufferin/Steeles, Dufferin/Finch, and to a lesser extent Bathurst/Steeles are currently close to capacity;
- increasing auto volumes in recent years have resulted in a lowering of transit operating speeds on Finch, Steeles and Alness (Dufferin) routes; and
- current cross-boundary transit services (e.g. GO Bus, GO Train) essentially serve the Yonge corridor. T.T.C. services which do go north of Steeles, do not extend into the major residential areas (e.g. Keele bus serves a Vaughan industrial area; Bathurst bus serves a small part of Thornhill and does not extend into Richmond Hill).

5.2.3 Summary of Inter-Regional Travel Findings

From the assessment of inter-regional travel issues the following summarizes the study findings:

- The Peel/Metro screenline between Highway 401 and the Lake and the York/Metro screenline between Dufferin Street and Bayview Avenue are presently experiencing traffic volumes that are at or approaching theoretical capacity;
- The projected greatest growth in travel within the study area is associated with the screenlines at the Peel/Metro boundary between Highway 401 and the Lake and the York/Metro boundary in the Dufferin to Bayview corridor. This growth will result in a worsening of a problem that is already severe; and
- The screenlines at the Peel/Metro boundary, north of Highway 401 and at the York/Metro boundary in the west section of Metro are presently operating well below capacity. Both of these areas are projected to experience increases in travel ranging from 67% to 117% by 2011.

5.3 ACCESS INTO THE CENTRAL AREA

The assessment of the issue of access into the Central Area was carried out by (i) reviewing road access, (ii) reviewing transit access and (iii) reviewing forecasts for demand to the Central Area.

5.3.1 Road Access

The existing volume to capacity ratios for roadways crossing the screenline surrounding the Central Area were assessed. The conclusions drawn from this assessment were that:

- The 'Gardiner Corridor' roads (i.e. Gardiner, Lakeshore, Queensway) are virtually at capacity from the Humber River through to the Central Area;
- the opening of Black Creek Drive has added capacity from the northwest at Highway 401 and Eglinton West screenlines, but

little or no additional capacity has been made available closer to the Central Area; and

- the corridor crossing the portion of the Eglinton screenline between the CN Newmarket and Bala subdivisions, according to the V/C data, is operating at around 90% of capacity. Several small residential streets are excluded from screenline 17, crossing the Central Area from the north, as they are thought to be essentially for local access only.

In addition to assessing the existing V/C analysis, actual travel times were monitored on three consecutive mornings in the fall of 1986, Staff from the Metropolitan Planning, and Roads and Traffic Departments were asked to record the time at each major intersection as they drove into work. This data was then supplemented by staff from the two departments undertaking specific timed runs for any major routes not surveyed. Additionally, M.T.O. Central Region staff provided some speed data for Highway 401. This data then covered most areas of Metro. However, when constructing travel time contours, it was still necessary to sketch in parts of the contours based on professional judgement, where data was not present. The results shown in Exhibit 19 are therefore felt to be basically correct, but should not be interpreted too finely.

The following observations are noted from the Central Area contour diagram:

- at the 16 km radius, travel time from all parts of Metro is similar at around 33 minutes. Northwest Metro appears to have a slightly better access time than other directions at around 32-33 minutes, but there is basically little difference;
- at the 8 km radius, travel time from the west and northwest (around 25 minutes) is not as good as from the north and east (15-20 minutes). The contours due west (i.e. along the Gardiner Expressway) are quite close together near the Central Area,

which is indicative of the stop-and-go peak period conditions; they then start to move outwards along the Etobicoke section of the Q.E.W. where higher speeds are observed; and

- the 30 minute travel time contour moves outwards in the direction of the northwest which indicates that Black Creek Drive/Highway 400 has a positive effect in providing a radial route (at least for a short distance) towards the Central Area.

In summary, based on the limited available data, there does not appear to be any great difference in roadway access time into the Central Area from any particular area of Metro at the present time.

With respect to future travel demand as discussed in Chapter 4, the auto share of the large increase in trips from the west and northwest (Peel, Halton and southwest Vaughan) would channel from either Highways 427, 401 (403) and Q.E.W., and all converge on the Q.E.W. east of Highway 427, and the Gardiner Expressway to access the Central Area. If the current (simulated) modal splits to the Central Area remain constant, this would result in a need for extra expressway capacity into the Central Area to accommodate 3,000 additional auto person trips by 1995, and 6,000 by 2011. Assuming an auto occupancy of 1.25 and an 11.6% truck content gives the need for extra vehicle capacity of 2, 700 and 5,400. If the M.T.O. low growth forecast scenario is applied to this corridor, there is a resulting deficiency in the range of 2,300-2,700 vehicles per hour by 1995 and 4,600-5,400 by 2011. This extra capacity is needed simply to serve future development in the Central Area. It should be noted that the car occupancy factor for the Gardiner Expressway was 1.34 (a.m.peak hour) in 1979 and was 1.24 in 1985. How this factor changes in the future will have a significant impact on vehicle demand.

Further analysis (for details, see Working Paper #8, Appendix B) has suggested that if the Milton and Georgetown GO Rail lines were

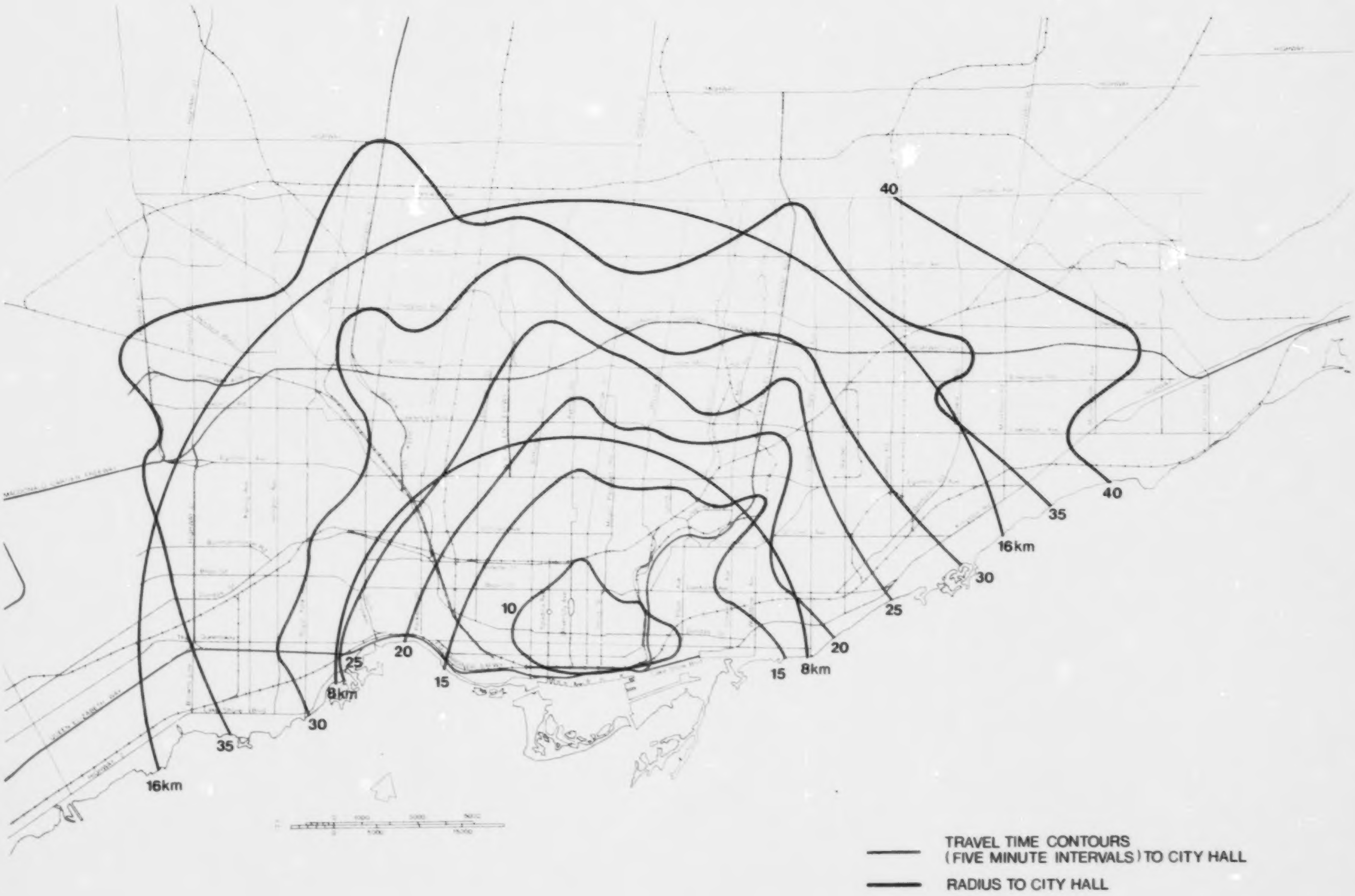

40
40
35
16km
30
25
20
8km
15
10
15
20
25
8km
30
35
16km
TRAVEL TIME CONTOURS (FIVE MINUTE INTERVALS) TO CITY HALL
RADIUS TO CITY HALL

EXHIBIT 19:
1986 AUTO TRAVEL TIME CONTOURS
(A.M PEAK) TO CITY HALL

operating on all day service and achieving an 80% market share (as per the Lakeshore line), this could potentially reduce the Gardiner Expressway peak hour assignment by a maximum of 1860 autos. This still infers a potential capacity problem for the Gardiner Expressway in the medium to long term even after the currently planned widening has taken place. Further analysis (see Working Paper #13, Appendix B) has suggested that an extension of Black Creek Drive or Allen Road could potentially divert 11% and 8% (respectively) of traffic from the Gardiner (these two figures cannot be added as they include the same trip diversions).

5.3.2 Transit Access

Trends in recent years on the major transit facilities serving the Central Area from, or through, the study area, are such that throughout the 1980's, there has been little or no increase in a.m. peak hour peak point subway ridership while GO Train ridership has gradually increased. The following observations are offered on the trends since 1980:

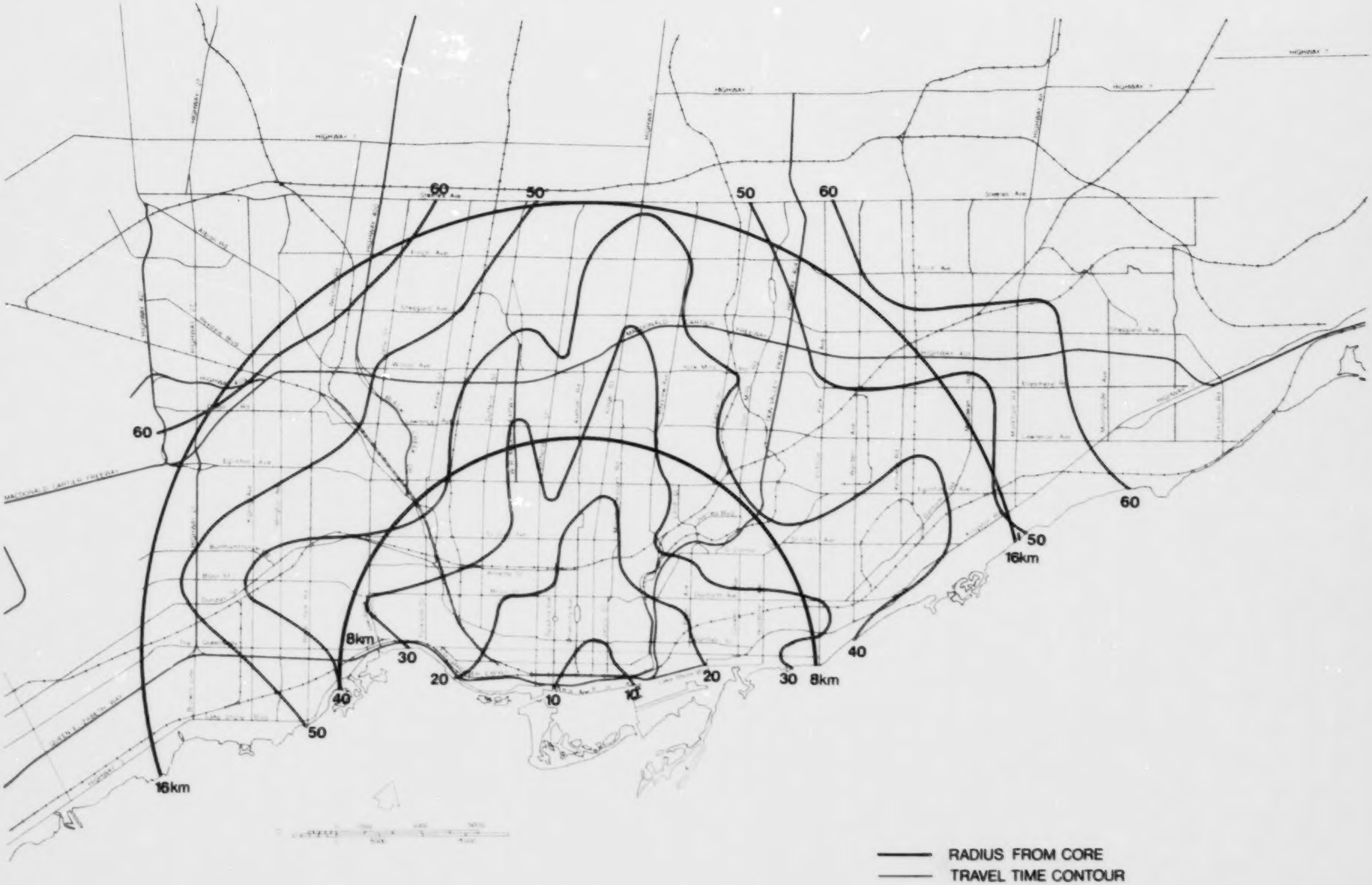
- Yonge Subway ridership north of Bloor peaked in 1980 at 28,000 and has stabilized at a little over 25,000 in the last few years;
- Spadina subway ridership north of Bloor increased from 13,000 in 1980 to 15, 000 in 1982 and has remained stable at that figure since;
- Bloor subway peak point ridership east of Spadina was 23,000 in 1980 and has stayed more or less the same since that time;
- Yonge and University peak point subway ridership south of Bloor has also remained steady during the 1980's; and
- Peak hour GO train ridership for the services that affect travel in the study area has increased since 1980 as shown in the following table:

	1980	1987	Increase 1980-1987
Lakeshore West	6,000	7,600	1,600
Milton	-	2,700	2,700
Georgetown	2,000	2,400	400
Bradford	-	500	500
Richmond Hill	1,000	1,400	400
Total	**9,000**	**14,600**	**5,600**

None of the transit facilities mentioned are operating at theoretical capacity. However, The Yonge subway south of Bloor Street is very close, operating at approximately 95% of line capacity. The Spadina (south of Bloor) and Bloor (west of St. George) subways currently operate at approximately 71% and 68% of capacity respectively.

Similarly, GO Train services are not currently operating at capacity, (see Table 5. 8) excepting one or two express services in the peak hour on the Lakeshore line. The main shortfall in current GO service is considered to be the lack of off-peak service (with the exception of Lakeshore) and hence lack of flexibility for passengers. This means that only passengers with a fixed '9 to 5' type working day, can rely on the peak period GO services. For many, the municipal transit off-peak option is either non-existent or extremely time consuming.

In addition to assessing the existing ridership, actual travel times were calculated as shown in Exhibit 20. This exhibit shows transit travel time contours (based on the Metro travel demand model municipal transit network) from all parts of Metro via TTC services to the King/Bay/Yonge area. Low travel times disproportionate to distance are illustrated where the contours move outwards which of course coincide with the four subway/LRT routes radiating from the Central Area. A 60 to 65 minute travel time at the 16 km radius line in north Etobicoke is shown. By comparison travel times from the 16 km radius


60
50
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60
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16km
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8km
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30
8km
40
50
16km
RADIUS FROM CORE
TRAVEL TIME CONTOUR

EXHIBIT 20:
TRANSIT TRAVEL TIME CONTOURS (1986)
FROM KING AND BAY

TABLE 5.8

A.M. PEAK HOUR AND PEAK PERIOD GO TRAIN PASSENGER ARRIVALS AT UNION STATION, 1986

	A.M. Peak Hour*				7:00-9:00 A.M. Peak Period			
Line	**Trains**	**Seats**	**Passengers**	**% Util.**	**Trains**	**Seats**	**Passengers**	**% Util.**
Lakeshore West	5	7,780	6,630	85%	7	9,690	8,320	86%
Georgetown	3	2,950	2,370	80%	4	3,760	2,870	76%
Richmond Hill	3	1,940	1,370	70%	3	1,940	1,370	70%
Milton	3	3,440	2,490	72%	3	3,440	2,490	72%
Bradford	1	650	380	58%	1	650	380	58%

* Notes:
1. Maximum hour calculated separately for each line
2. All 3 Richmond Hill trains (30-min headway) assumed to arrive in 1 hour

line in other parts of Metro are: 55 minutes from west-central Etobicoke, 40-45 minutes from North York (Steeles Avenue) and 50-55 minutes from central Scarborough. A comparison of travel times from the 8 km radius from the Central Area gives the following comparison: from the west, 30 minutes; the northwest, 40 minutes; the north, 25 minutes; the northeast, 40 minutes; and the east, 30 minutes.

Any improvements in transit access time to the Central Area by way of additional north-south (to Bloor) or east-west (to Spadina) subway lines serving the northwest, would only provide marginal improvements. This is because the penalties of having to travel twoor-more sides of a rectangular grid and the need to transfer are retained.

The advantage of direct access, as offered by the Yonge and Spadina lines to the north, and the Bloor/Danforth to the west and east is not gained. The existing four lines, as well as being part of a grid transit system, also serve as radial lines from the Central Area. In order to gain similar access to the Central Area for the northwest as is currently offered by the existing lines elsewhere, a radial line to the northwest would be required. By way of example, the Georgetown GO Train service reduces the travel times from northwest Metro to the Central Area by around half (approximately 30 minutes), when compared to those in Exhibit 20. However, this service does not offer a frequent stop/headway municipal type service. By comparison, an addition to an east-west or north-south subway line would only reduce travel times by around 7 to 12 minutes, which is partly explained by the indirect service offered, and also by the current high surface transit speeds in the outer Metropolitan area.

5.3.3 Central Area Demand Forecasts

An assessment was made of existing and projected changes in demand to the Central Area, in so far as they would affect the study area.

The employed labour force for the northwest area of Metro (i.e. in north Etobicoke - P.D.9) and the northwest portion of North York (P.D.10) are shown by far to have the least dependency on the Central Area for employment, when compared with any other planning district in Metro. For example, only 1,300 peak hour trips originate from north Etobicoke and have destinations in the Central Area. The resident labour force in this northwest area finds employment near to its residence, or in neighbouring areas in Metro and the surrounding regions. These destination areas are primarily industrial areas. It can be postulated that, as transit is the main mode of access to the Central Area and that transit access to this area is not very good (60 minutes and even longer before the Bloor and University subway lines were extended), people moving to this area did so without a view to working in the Central Area. It can alternatively be postulated that as northwest Metro is a major industrial area, blue-collar workers found this area an ideal place to locate. There is an element of the "chicken and the egg" syndrome here regarding cause and effect. As a useful comparison, however, northeast Metro which has a similar transit journey time into the Central Area, shows a greater dependency on the Central Area than the northwest. The main differences between the two areas is the existence of significantly more industrial employment in the northwest and surrounding areas, and more direct expressway access in the northeast.

The 2011 forecast of distribution of trip origins having destinations in the Central Area shows little change in the number of trips originating from northwest Metro destined to the Central Area. The most significant differences are declines of 2, 300 peak hour trips from P.D.2, and 500 from P.D.3. The future distribution of trip origins is shown to change with more trips originating outside of Metro and particularly to the west of Metro (mainly south of Highway 401). The change in distribution, as illustrated by substracting 1981 from 2011 trips to the Central Area, produces for every 100 new trips the following changes:

+90 trips from the surrounding Regions to the Central Area;
+50 trips from the Central Area to the Central Area;
+ 2 trips from outer Metro to the Central Area; and
-42 trips from inner Metro to the Central Area.

There follows a summary of key issues with respect to access into the Central Area:

- Accessibility into the Central Area is limited by the north/south/east/west nature of the existing grid system, whereas the move from the northwest to the Central Area is a northwest to southeast move, i.e. the move is at 45 degrees to the basic grid. This is particularly applicable to transit routing within the area, with the exception of the Georgetown GO Train service which does bisect at approximately 45 degrees;
- Northwest Metro does not provide a significant number of Central Area employees. (Approximately 1% of Central Area employees are from Planning District #9, i.e. north Etobicoke for which currently a 73% transit modal split is estimated);
- Future growth in demand for access to the Central Area is concentrated almost entirely from the Central Area itself and the outlying Regions primarily Peel/Halton followed by York Region) with a net reduction from the northwest Metro area as a whole and particularly the inner urban area. The Central Area itself will contribute a significant amount of the new Central Area employees more than offsetting the reduction in trips from other parts of Metro;
- There is a current deficiency in level of service on the Gardiner Expressway. The majority of demand on the Gardiner accessing the Central Area, is from west of Metro. (Approximately 70% is from Peel/Halton);
- The growth in travel from north of Metro to the Central Area will be largely offset by a decline in the number of trips from the northern inner area of Metro to the Central Area. Therefore

many short distance trips on the arterial roads from the north will be replaced by longer distance trips from York Region and similarly for transit, ridership by Metro residents will be reduced and offset by a large growth from York Region on either GO Transit or the subways; and

- Transit access from the north (York Region) is not as good as from the west (Peel/Halton) and this reflects in a current lower transit modal split from the north.

5.3.4 Summary of Central Area Needs

In short, all transportation improvements to the Central Area in the future will be needed to cater to inter-regional trips.

Support for the proposed Gardiner widening is clearly demonstrated. Additional relief to the QEW/Gardiner corridor will be needed in the future if the long range travel demand forecasts are correct. Given the Metro-wide trend to declining auto occupancy and the fact that the one lane (in each direction) widening of the Gardiner now under active consideration will result in the ultimate physical corridor development, traffic management measures should be pursued with the aim of increasing the utilization of the corridor through such measures as H.O.V. (High Occupancy Vehicle) lanes and/or reversible lanes.

Incremental improvements to GO Rail services will also be needed. The timing of such improvements are crucial so that they do not stimulate growth in the Central Area (in keeping with the objectives of the Metropolitan Official Plan) while at the same time maximizing transit ridership to reduce impacts on the road system. It is therefore extremely important that Metropolitan staff be involved in the establishment of a program to improve GO services. With respect to decisions on the improvements, it should be noted that the recently established Central Area Monitoring Program will play an important role.

Finally, while forecasts show a declining northwest Metro to Central Area market, transit access from this area is relatively poor compared to west and north Metro. Therefore, in conjunction with any upgrading of the Georgetown GO Rail service, Central Area accessibility for northwest Metro residents should be improved through the provision of additional or relocated stations, off-peak service, and fare integration and service integration with T.T.C. routes.

5.4 EFFECTS OF HIGHWAY 407

The assessment of the effects of Highway 407 on major roadway links within the study area was assessed by (i) using Metro's travel demand forecast model to produce all-or-nothing assignments that could occur (if capacity were available) and (ii) assessing the likely diversions that could occur due to capacity constraints within the network.

5.4.1 Analysis of All-or-Nothing Assignments

The results of the all-or-nothing assignments of vehicle trips onto road networks with and without Highway 407 show that eastbound traffic on Highway 407, between the Peel/Metro boundary and Keele Street, is diverted almost entirely from Steeles Avenue and Highway 7 as shown in Table 5.9. Some of this diverted traffic would then flow into Metro across the north Metro boundary between the Humber River and the CN Newmarket subdivision instead. In addition, southbound traffic across the central section of the north Metro boundary between the CN Newmarket and Bala subdivisions would be somewhat reduced. Other effects of Highway 407 on reassignment would appear to be minor.

The reassignments shown in Table 5.9 do not reflect the network constraints that will be imposed by roadways operating at their capacity. In order to address this concern, an assessment was made of the potential diversion of traffic from Highway 401 to Highway 407 due to constraints on Highway 401.

Table 5.9

COMPARISON OF 2011 A.M. PEAK HOUR EASTBOUND AUTO TRAFFIC ASSIGNMENTS* WITH AND WITHOUT HIGHWAY 407

Screenlines	Roadway	With Highway 407	Without Highway 407	Absolute Difference	% Change
Metro/Peel Boundary (Between Highways 7 & 401 inclusive)	Highway 7	2,283	6,207	- 3,924	-63.2
	Highway 407	5,159	0	+ 5,159	
	Steeles Ave.	501	1,466	- 965	-65.2
	Roadways south of Steeles to Highway 401 inclusive	17,490	17,985	- 495	- 2.8
	TOTAL	25,433	25,658	- 225	- 0.9
Humber River (between Highways 7 & 401 inclusive)	Highway 7	1,879	5,410	- 3,531	-65.3
	Highway 407	5,362	0	+ 5,362	
	Steeles Ave.	329	511	- 187	-36.6
	Roadways south of Steeles to Highway 401 inclusive	18,456	19,387	- 925	- 4.8
	TOTAL	26,026	25,308	+ 718	+ 2.8
CN Newmarket Subdivision	Highway 7	1,222	4,173	- 2,951	-70.7
	Highway 407	3,931	0	+ 3,931	
	Steeles Ave.	401	529	- 128	-24.2
	Roadways south of Steeles to Highway 401 inclusive	19,256	20,127	- 871	- 4.3
	TOTAL	24,810	24,829	- 19	- 0.1

* All-or-nothing assignments

5.4.2 Potential Diversion from Highway 401

In order to obtain a better indication of the future traffic conditions on Highway 401 in the study area, an attempt was made to rationalize the forecast for 2011 eastbound traffic on the following selected sections of Highway 401:

1. between Highway 427 and Martin Grove Road;
2. between Islington Avenue and Weston Road (at Humber River); and
3. between Keele Street and Dufferin Road (at CN Newmarket subdivision).

Caution is to be exercised in interpreting the results as the Metro travel demand model is a coarse strategic regional planning model and, as such, is not set up to produce link forecasts with any great accuracy. However, the possibility does exist to refine the forecasts should it be necessary to do so.

The following table shows the basic all-or-nothing forecasts and most recent traffic counts (a.m. peak hour eastbound vehicles for Highway 401):

Location on Highway 401	2011 Forecast	Most Recent Traffic Count
between Highway 27 and Martin Grove Road	13,555 vehicles	8,542 (1986)
between Islington and Weston Road	17,156 vehicles	11,185 (1987)
between Keele Street and Dufferin Street	16,513 vehicles	9,843 (1987)

Highway 401 will not be able to handle these forecast traffic volumes at the three above-mentioned locations. The section between Islington and Weston Road is currently at capacity and will not be able to handle any further increases in traffic. The section between Highway 27 and Martin Grove is considered to be currently operating at its practical capacity as well, since the capacity at this point is constrained by the bottleneck at the Humber River. The Keele/ Dufferin section has some reserve capacity, but nowhere near sufficient to handle the anticipated future increases.

Select link O-D matrices were created for eastbound trips assigned to Highway 401 in order to have a closer look at a potential diversion to Highway 407. The section between Highway 27 and Martin Grove Road was selected for closer examination of the relief potential of Highway 407, as this is the first inbound link into the study area from the west.

In an attempt to rationalize the all-or-nothing assignments to this section of Highway 401, the potential for certain of these O-D movements to alternatively use Highway 407 was examined. This examination concluded that some of the traffic from Mississauga and Halton destined to the Steeles/Finch corridor would divert from Highway 401 to Highway 407 as the trip lengths were similar, and assuming Highway 407 offered a higher level of service than the already congested Highway 401, the trip times would be shorter. About 50% of this auto traffic (1,620 autos) commuting to the northern portion of North York and all of the auto traffic (2,140 vehicles) commuting to the southern portion of York Region were thought likely to divert to Highway 407 and would likely find the following routes more attractive:

Route 1. From Q.E.W. to Highway 427 to Highway 407;
Route 2. From Highway 403 to Highway 410 to Highway 407;
Route 3. From Highway 401 to Highway 410 to Highway 407.

Approximately 1,630, 830 and 1,300 auto trips have been respectively rerouted to routes 1, 2 and 3 as noted above (3,760 total). Model forecasts (2011) for the same three sections of Highway 401 previously considered with the inclusion of Highway 407 and downwardly adjusted by 3,760 vehicles are shown in the following table:

Location	Adjusted 2011 Forecast (a.m. Peak Hour Eastbound)	Most Recent Traffic Count (a.m. Peak Hour Eastbound)
between Highway 27 and Martin Grove Road	9,686 vehicles	8,542 (1986)
between Islington and Weston Road	13,097 vehicles	11,185 (1987)
between Keele Street and Dufferin Street	12,197 vehicles	9,843 (1987)

It could be argued that the capacity restraint inflicted by Highway 401 could produce a higher diversion to Highway 407. This would start to include extremely circuitous trips which are not well served by Highway 407 and also assumes that the level of service on Highway 407 will be much better than Highway 401. Experience in the past has shown that new expressways in the Metropolitan urban area reach capacity not very long after opening.

In summary, as conditions upstream eastbound at the Humber River are currently at capacity, Highway 401 essentially cannot handle any growth in traffic other than by traffic line-ups continuing to extend further west. Currently, line-ups from the bottleneck at Humber River often extend to west of the Peel/Metro boundary. Additionally, the peak period would be forced to extend and the tendency for traffic to divert onto parallel arterial roads (Eglinton Avenue being the most obvious option), to avoid the delay will increase. As the first section of Highway 407 is unlikely to be completed until 1995, traffic congestion on Highway 401 through the study area is likely to steadily worsen. The opening of Highway 407 is then likely to bring some short-term relief, but continued traffic growth on Highway 401 will exceed the relief offered by Highway 407.

A corresponding increase in traffic on Highway 407 due to the diversion from Highway 401 will bring the total eastbound volume in the Highway 407 corridor (i.e. Steeles Avenue/Highway 7) to approximately 9,500 vehicles in the year 2011. The six lane roadway which is proposed for Highway 407 plus the existing 4 lanes and proposed 6 lanes on Highway 7 and Steeles Avenue respectively, would appear to be able to handle this volume of traffic adjusted to include a typical expressway truck content (approximate total corridor capacity of 12,000 vehicles/hour).

5.4.3 Role of Highway 407

A select link origin/destination matrix on Highway 407 between Highway 27 and Kipling Avenue for the year 2011 was carried out. A total of 5,777 eastbound auto vehicles was assigned to this section of the Highway. The bulk of the eastbound traffic, consisting of 3,800 vehicles and representing about 69% of the total volume, originates from Brampton and Caledon in Peel Region and is destined to the northern portion of North York (49% of total) and the southern portion of York Region (47% of the total). Of the remainder, 22% of the trips originate from Mississauga or Halton. Additionally, a manual reassignment, as described in the previous section, adds 3, 800 vehicles from Highway 401 to Highway 407, which originates in Halton and Mississauga and is destined to the Highway 7/Steeles/Finch corridor.

In summary, the select link of Highway 407 shows 49% of the forecast traffic along the Highway 27-Kipling section is destined to Metro and 40% to York Region from the Region of Peel. Forecasts for this northern section of the study area show there to be greater forecast increases in east-west travel than north-south. Highway 407 in its role as a major distributor, is therefore, likely to have a positive effect in relieving pressure in Metro on Steeles Avenue in particular. It will also better dissipate the impact of future development in the area by redistributing some southbound traffic away from the congested central section of the York/Metro boundary towards the less congested western end of the boundary.

From this assessment the following summarizes the effects of Highway 407:

- Re-routing changes will occur essentially in the northern portion of the study area due to the close proximity to Highway 407. In particular, Steeles Avenue and Highway 7 will benefit mostly from the relief offered by Highway 407; and
- Forecasts show that while Highway 407 will accommodate some of the traffic growth forecast for Highway 401, the net long term growth for Highway 401 is still greater than can be realistically accommodated.

5.4.4 Conclusion

The results of this analysis have indicated a need to pursue further ways of relieving the critical section of Highway 401 (through Etobicoke) in both the near and long terms. In order to fully assess the potential of certain corridor improvements (e.g. Wilson Avenue extension, Eglinton Avenue widening, E.W.R.T., east-west rapid transit line north of Highway 401), an O-D survey of current traffic on Highway 401 needs to be carried out.

5.5 EGLINTON CORRIDOR NEEDS

The assessment of the issue of Eglinton corridor needs was carried out under the direction of a sub-committee of the Working Committee comprised of representatives from the Cities of York, Etobicoke and Toronto, the Region of Peel, TTC, and Metro Planning and Roads and Traffic Departments. The assessment was structured to address existing conditions and travel demand forecasts.

5.5.1 Background

Eglinton Avenue West is intrinsically two different roads as it traverses the study area. East of Keele Street and through the City of York, it is part of the early urbanized Toronto which at that time was more on the edge of the urban area rather than in the inner area as it now finds itself. The road is characterized by a mix of residential and commercial development fronting quite closely onto the roadway with on-street parking (off-peak only) and frequent signalized intersections. The progression of urban development from the Central Area towards the northwest can be seen in terms of the growing numbers and importance of the automobile and is reflected in the arterial road right-of-way widths, as designated in the Metro Official Plan. The right-of-way widths increase from 20 metres for Dundas, Bloor and St. Clair, to 27 metres for the section of Eglinton (East of Keele); 30 metres for Lawrence, Wilson and most of Sheppard and finally 36 metres for Finch and Steeles at the edge of the Metropolitan Area.

West of Keele Street, the designated right-of-way width for Eglinton Avenue increased to 30 metres as far west as Jane Street and to 45 metres and over between Jane Street and Highway 427. The right-of-way is 36 metres west of Highway 427 to Etobicoke Creek. The wide right-of-way through Etobicoke east of Highway 427 is due to the protection of the "Eglinton Transportation Corridor" as designated in the Metro Official Plan. Eglinton Avenue through Etobicoke and as far as Keele Street in York with its much wider right-of-way, no on-street parking and a wider spacing between signalized intersections is therefore a much more efficient arterial with the capability to be further improved.

The perceived problems/issues are therefore different for the two sections of Eglinton Avenue. The following summarizes the perceived issues/deficiencies for the two sections of Eglinton Avenue:

East of Keele Street

o narrow right-of-way, hence little opportunity to widen the road or provide transit priority measures, such as exclusive bus lanes;

o low transit speed (9 mph) discouraging transit use;

o road discontinuity at Allen/Eglinton causing through north-south traffic to be 'dumped' on Eglinton Avenue thereby reducing effective east-west capacity;

- local traffic management measures deter traffic from using local streets to bypass congestion on Eglinton; and
- on-street parking in off-peak periods with illegal parking in peak periods.

West of Keele Street

- discontinuity of Eglinton Avenue through Highway 427 restricting capacity;
- traffic congestion between Martingrove Road and Highway 401 interchange;
- the proposed rapid transit facility along Eglinton Avenue is seen as serving the population of north Etobicoke much better than the Bloor or University/Spadina subways because of the distance from either facility; and
- ability to accommodate road widening or exclusive transit right-of-way through Highway 427 underpass, but not both without rebuilding structure.

Most of these issues/perceived problems stem from the perceived need for the Eglinton West Rapid Transit Line and are seen as the rationale for construction in the near term. The Eglinton West line is also seen as part of the solution to serving the increasing number of inter-regional trips from Peel Region to Metro.

5.5.2 Existing Conditions

Existing conditions were assessed from the viewpoints of auto speeds, transit speeds, cordon count trends, TTC ridership and travel patterns.

Auto speed data was last collected comprehensively in 1978 for the 'Eglinton Corridor Study - Its Problems and Needs'. With respect to travel speed, the study identified the following problem areas:

Westbound	Eastbound
Bathurst to Oakwood	Kodak to Bicknell
Locksley-Dufferin-Ennerdale	Ennerdale to Bathurst
Richardson to Keele	
Kodak to Weston	

The criteria used to identify these areas were a combination of average speeds below 20 mph and amount of average stopped time. With the exception of the Keele/Richardson area, the area contributing the most to slow speed on Eglinton is essentially the eastern end from Caledonia to Glencedar, just west of Bathurst (i.e. either side of the terminus of Allen Road).

Some traffic speed/delay runs were done in 1986 for this study. However, the sample was not large enough to carry out a similar analysis with any confidence.

Transit speeds for the whole of Metro were discussed in Chapter 3. Wilson, Lawrence West, Eglinton West and St. Clair West are east-west inner area transit routes through the mid-section of the north-west study area having low average scheduled speeds of around 9 mph. The portion of the Eglinton West bus route in Etobicoke in contrast has a scheduled operating speed of approximately 18 mph, which clearly illustrates the difference in level of service for the two previously defined sections of Eglinton Avenue.

Over the last three years, the TTC has monitored routes to identify the effects of increasing congestion. Eglinton West and the other three east-west routes mentioned, have not been identified as experiencing a decline in speed in that time frame. In all likelihood, the speeds fell many years ago when the urban area expanded and at that time were quite possibly at 9 mph, near to the lower limit possible. The Spadina bus, by comparison, has a scheduled operating speed of 6 mph which has the slowest scheduled operating speed of all routes in the study area.

Cordon count trends in a.m. peak period auto and transit person trips were reviewed along Eglinton Avenue West at the Humber River and C.N. Newmarket screenlines. Eastbound auto trips at the Humber have remained steady since 1975; transit ridership has declined slightly. Westbound trips both auto and transit, at the Humber River have been steadily increasing during the 1980's.

At the C.N. Newmarket subdivision, eastbound transit ridership increased considerably between 1975 and 1983 and now appears to have stabilized. Westbound auto and transit trips appear to have been stable since 1975.

The main difference between the counts at the Humber River and the C.N. Newmarket subdivision is the much lower transit ridership across the former, unlike the latter which has roughly equal auto and transit person counts.

The stability of the vehicle counts at these two locations also provide some explanation as to why the T.T.C. have not recognized any decline in transit speeds due to increased traffic congestion.

T.T.C. ridership figures for a.m. peak period accumulations on some of the main routes in the study area were reviewed. Accumulated ridership on Eglinton West is quite modest until Keele Street. Impressions of T.T.C. service planning staff are that there is a large turnover of passengers on the route indicating the route to be acting as a distributor as much as a long haul service to the subway. This would be confirmed by the scatter of work trips destined to this area and also for work trips originating from this area.

Travel patterns were reviewed for the 1971 and 1981 Census home to work linkages destined to Planning District 3, which is bisected by Eglinton Avenue. The trip origins are extremely diverse in both 1971 and 1981. The main difference in the data between the two census years is the reduction in local trips to P.D.3 with a corresponding increase from areas further afield such as north Scarborough, Vaughan, Richmond Hill, Brampton and Mississauga (in effect, a further scattering of trip origins). If there is any bias in trip origins at all, it is from the north where in 1981 P.D.11 and particularly P.D.10 (North York) together provided 16% of all trip origins. P.D.3 itself provided 32% of all trip origins.

The 1981 simulated transit modal split of trips from each of the major planning districts is quite good for most origins in Metro other than from the east. The surrounding Regions offer only a small proportion of trips to this area and the transit modal split is estimated to be extremely low at between 2% and 10%.

5.5.3 Travel Demand Forecasts

Travel demand crossing the Humber River eastbound is forecast to increase from 6,900 to 8,300 person trips (excluding GO Rail) between 1981 and 2011. Further east at the C.N. Newmarket subdivision, the eastbound forecasts show very little growth similar to recent stable cordon count trends. The 2011 forecast is in fact similar to the 1983 cordon count.

The forecasts for southbound travel demand across Eglinton Avenue between the Humber and the C.N. Newmarket subdivision (with the exception of GO Rail) show no increase in travel demand. Forecasts for southbound travel demand across Eglinton Avenue (between the CN Newmarket and Bala subdivisions) show an increase in transit ridership, but not in auto travel.

The resulting picture as far as the Eglinton corridor is concerned is that a small increase in travel demand is forecast from the west into the western part of P.D.3 but does not show up further east at the C.N.

Newmarket Subdivision. This increase is for trips destined to new jobs in the York Municipal Centre and the Rogers Road/Weston Road area. New trips are forecast coming from Mississauga and Brampton with a significant loss of local trips due to a declining residential labour force and also increased job opportunities elsewhere.

The number of peak hour person trips originating from Mississauga and Brampton destined to P.D. 3 as a whole is shown below:

	Simulated	Forecast		
From	1981	1991	2001	2011
West Mississauga	262	231	237	232
Central Mississauga	1017	1479	1916	2279
South Mississauga	342	334	358	354
All Mississauga	1621	2044	2511	2865
Brampton	857	999	1324	1475
Mississauga & Brampton	2478	3043	3835	4340

This shows a forecast increase from 1981, in trips from central Mississauga of 462 up to 1991, 899 up to 2001 and 1,262 up to 2011. Similarly for Brampton, an increase of 142, 467 and 618 trips for the same horizon years is observed. The number of inter-regional trips from the west to PD4 (east of PD3) is fairly insignificant. Therefore, even if a high transit modal split was assumed for inter-regional trips to PD3, the ridership would not in itself justify rapid transit in the time frame considered.

From this assessment of the issue of Eglinton Corridor needs, the following conclusions are drawn:

o Eglinton Avenue is essentially two different roads as it traverses the study area. To the west of Keele Street, Eglinton has a wide right-of-way with comparatively little side friction. To the east of Keele Street it is a commercial street with numerous signalized intersections and on-street parking;

- Present roadway capacity deficiencies exist at isolated intersections west of Keele Street, whereas most intersections east of Keele Street are subjected to demands beyond their capacity;
- Transit and auto speeds through Etobicoke are high but drop significantly through York;
- Future travel demands in the Eglinton corridor, as discussed in the Overview, show major increases (179%) at the Peel/Metro boundary, moderate increases at the Humber River (35%) and very minor increases at the CN Newmarket screenline (8%); and
- Restrictions on development potential within York are occurring due to existing poor operating conditions, while construction of the EWRT cannot be justified in the near term for a number of reasons including the current low density development within the corridor (i.e. a "Catch-22" situation).

5.5.4 Summary of Needs

The last point above captures the essence of the Eglinton Corridor issue; it is a development issue. Low mobility is present through the portion of the Eglinton corridor east of Keele Street, just like other corridors (with the exception of the impacts due to the Allen Road discontinuity) in this older urban area. The reason Eglinton is "special" is that the City of York have ambitions to develop the corridor (particularly at the main arterial intersections) and see the E.W.R.T. as the necessary stimulus. As a modest increase in demand is expected at the Humber River (but not much further east), improvements are justified to increase capacity from the west to at least the York Municipal Centre (between Black Creek Drive and Keele Street). Implementation of an inter-regional bus service (extending from the Mississauga busway) possibly on exclusive bus lanes plus a new GO station at Eglinton Avenue on the Georgetown line would be worthy initial improvements which would help to establish a transit focus for the corridor.

Further transportation improvements would only be justified when significant redevelopment within the Eglinton corridor occurs, thus requiring extra capacity. A transportation improvement/redevelopment strategy is therefore worth pursuing for the future. Regardless of transit initiatives, there will continue to be operational problems on the roads due to the narrow right-of-way and on-street parking. As part of the redevelopment strategy, removal of on-street parking to off-street facilities and the implementation of intersection improvements and any other improvements identified to increase the speed of the Eglinton West bus service would have to be pursued.

5.6 TRANSIT ACCESS TO PEARSON INTERNATIONAL AIRPORT AND YORK UNIVERSITY

The assessment of the issue of transit access to Pearson International Airport and to York University was addressed as two separate issues.

5.6.1 Pearson International Airport

Current (1987) annual airside passenger movements (on/off) at Pearson International Airport are in the order of 16,000,000 with about 74% of the passengers originating or terminating at Toronto. There are approximately 14,000 employees based at the Airport, but the nature of employment there is such that only about 60% of the employees are on site at any one time.

The most comprehensive recent Airport groundside transportation survey is the July 1980 Vehicle Classification and Occupancy Survey. Table 5.10 shows modal split and trip purpose breakdowns for all trips to the Airport on a typical 1980 summer day. Total person trips by mode are summarized below:

TABLE 5.10

GROUNDSIDE PERSON TRIPS BY PURPOSE AND MODE

1980 AVERAGE SUMMER DAY

Trip Purpose		Mode of Groundside Access Auto, Taxi, Limo. Trips	%	Transit Trips	%	Total Trips
Air Passengers	(27%)	27,200	(85.0%)	4,800	(15.0%)	32,000
Greeters	(16%)	18,800	(98.9%)	200	(1.1%)	19,000
Well Wishers	(22%)	25,450	(97.9%)	550	(2.1%)	26,000
Airport Employees	(19%)	21,820	(97.4%)	580	(2.6%)	22,400
Business, Sightseeing and Other	(16%)	18,580	(97.8%)	420	(2.2%)	19,000
Totals	(100%)	111,850	(94.5%)	6,550	(5.5%)	118,400

Note: Figures in brackets represent modal split percentages by trip purpose

Mode	No. of Person Trips	% By Mode
Passenger Vehicles	92,900	78.5
Taxi/Limousine	15,300	12.9
Mini-Bus*	3,625	3.0
Conventional Bus	6,575	5.5
	118,400	100.0

* includes ridership on buses to outlying areas such as Hamilton, Peterborough, etc.

These modal splits reflect the adequate freeway access to and from the Airport, the limited public transit options available to potential riders, the specific and unusual needs of airport users, the location and land use of the Airport district, the availability of parking space, the spread of origins and destinations of Airport users (see Table 5.11), shiftwork that occurs at the Airport and the distance of the Airport from major generators. Three out of every four airport users access the grounds by private automobile and a further 15% use commercial shared ride services (taxis, limos and hotel minibuses). Only 5% use bus transit and 85% of those passengers are on the Gray Coach Airport Express bus services. The public transit services at the Airport include GO Buses, a Toronto Transit Commission bus route and a Mississauga Transit bus route, serving between themselves only about 850 of the 123,000 or more daily Airport person trips (see Table 5.12).

The external freeway system, including Highways 401, 409 and 427, serves the Airport area under conditions of peak hour congestion, but generally provides an acceptable level of service. Significant traffic congestion affects airport users generally only within the property and in particular at Terminal One, where the parking garage, curbs and approach roads experience extreme congestion and are at times closed

TABLE 5.11

Zone	Employee Origin %	Number of Employees (1980)
Halton	7	437
Brampton	14	963
Mississauga	20	1,343
Etobicoke	20	1,364
North York North of Highway 401	6	390
Scarborough	5	346
Remainder of Metro Toronto	18	1,216
Other	10	682
	100	6,741

Note: Total employment in the airport zone in 1980 was 11,665, of which only 6,741 were typically present on a 1980 day.

Source: 1983 Peel Employee Transportation Survey

TABLE 5.12

SUMMARY OF LOCAL TRANSIT RIDERSHIP AT LBPIA

Service	Date	Count Period	IN		OUT		TOTAL	ALL DAY		
			Count	PK HR Vol	Count	PK HR Vol	PK HR Vol	In	Out	Total
TTC Route #58 Malton	2.4.86	up to 9 a.m. 4 to 7 p.m.	98 14	58 7	24 76	14 46	72 53	304	261	565
Mississauga Transit Route #7	?.11.82	7 to 9 a.m. 4 to 7 p.m.	34 4	20 2	14 24	9 15	29 17	41	41	82
Gray Coach Subway Routes	2.9.83 (highest vol.in 83/84)	7:30–8:30 a.m. 5 to 6 p.m.	81 117	81 117	29 86	29 86	110 203	1290	1249	2539
Downtown Route	5.5.84 (highest vol.in 83/84)	7:30–8:30 a.m. 5 to 6 p.m.	54 115	54 115	63 293	63 293	117 408	623	1307	1930
GO Bus Brampton–Toronto Route	1987 (est.)	7:30–8:30 a.m. 5 to 6 p.m.	65 0	65 0	0 45	0 45	65 45	120	80	200
TOTAL		7:30–8:30 a.m. 5 to 6 p.m.	278 241	278 241	115 485	115 485	392 726	2378	3938	5316

SOURCE: Data provided by individual transit authorities.

off during peak travel periods. This congestion affects the level of service offered to both auto and bus users in their access to the Airport. The repercussions on transit services are significant, for route and service requirements do not allow buses to avoid the Terminal One curb zone and the service offered to riders at peak periods suffers uncontrollable delays.

The ongoing development of the Airport groundside facilities, including the planned Terminal 3 and its associated roadworks, is designed to improve transportation within the property and alleviate extreme congestion at Terminal One and its approaches.

The need for rapid transit may be generated from future demand for travel and general transit service to and from the airport for a variety of future scenarios, leading to a range of rapid transit demand forecasts. Table 5.13 summarizes a variety of possible transit demand scenarios, illustrating the effect of future shifts in modal split and employment figures. The range of demand may be defined by four basic scenarios: low economic growth with no change in transit modal split from the present; high growth with no change in modal split; an increase in transit modal split (due to, for instance, a rapid transit connection) against a background of low growth; and a high rate of economic and travel growth accompanying an increase in transit modal split. The key to achieving the higher transit modal share would be reducing on-site parking and/or making it more expensive particularly for airport employees.

The range of transit demand scenarios developed in Table 5.13 are summarized along with the other available demand forecasts in Table 5.14. The forecasts may be compared to a current (1984) local bus transit modal split of approximately 4.2% and peak hour transit use of about 700 persons.

TABLE 5.13

FUTURE TRANSIT DEMAND SCENARIO AT LBPIA

Year	Asumptions	Airport employees	Air Pass. (million)	Daily Person Trips	Modal Split to Transit	Daily Transit Trips	% Daily Person Trips in AM PK HR	AM Peak HR Person Trips (%)	% Daily Transit Trips in AM PK HR	AM Peak HR Transit Demand	% Daily Transit Trips in PM PK HR	PM PK HR Transit Demand
1980	Base Data	11,665	14.5	123,500	4.2	5,245	6.7	8,200	6.9	364	13.3	698
1986	Existing Extrapolated from 1980 Base	13,500	16.5	133,000	4.2	5,500	6.7	8,900	6.9	380	13.3	730
1991	Extrapolate from 1980 Base	15,800	20.0	155,000	4.2	6,500	6.7	10,400	6.9	450	13.3	865
1991	Increase Transit Modal Split	15,800	20.0	155,000	10.0	15,500	6.7	10,400	6.9	1,070	10.0	1,550
1991	No Increase in Employee Productivity	16,500	20.0	157,500	4.2	6,600	6.7	10,550	6.9	455	13.3	880
1991	MTS* Employment and Modal Split	18,170	20.0	162,000	14.4	23,300	6.7	10,850	6.9	1,610	10.0	2,330
2011	Extrapolate from 1980 Base	20,800	28.0	214,000	4.2	9,000	6.7	14,400	6.9	620	13.3	1,200
2011	Increase Transit Modal Split	20,800	28.0	214,000	10.0	21,400	6.7	14,400	6.9	1,480	10.0	2,140
2011	MTS* Modal Split	20,800	28.0	214,000	16.4	35,100	6.7	14,400	6.9	2,420	10.0	3,500
2011	MTS* Employment	30,170	28.0	240,000	16.4	39,400	6.7	16,100	6.9	2,700	10.0	3,940
2011	Increase Modal Split (Introduce Rapid Transit)	28,000	28.0	214,000	18.5	39,600	6.7	14,400	6.9	2,730	10.0	3,960

Note: * MTS = Mississauga Transportation Study

TABLE 5.14

SUMMARY OF TRANSIT DEMAND FORECASTS

SOURCE	1991		2011		NOTES
	MODAL SPLIT %	PEAK HOUR TWO-WAY TRANSIT DEMAND	MODAL SPLIT %	TWO-WAY TRANSIT DEMAND	
Mississauga Transportation Study	14.4	1,213	16.4	2,422	Assumes surface (bus) transit only.
Mississauga Transportation Study	14.4	1,213	18.5	2,793	Computer model rerun for the introduction of a rapid transit link between Eglinton Avenue Rapid Transit line and a terminal at Dixon Road/Highway 427 by 2011
P.I.A. Intra-Airport Transportation Study	-	1,360	-	-	Forecast done for 1991 only.
GO-ALRT Ridership Demand Forecasts Scenario C	-	-	12.6	3,900	29,500 24 hour transit trips from GO-ALRT forecast x 13.2% PM peak hour factor from existing counts.
Scenario D	-	-	12.6	3,465	26,250 24 hour transit trips.
Range	-	-	12.6	2,770 - 4,700	21,000 - 35,500 range in 24 hour trips (±20%).
Existing Demand Extrapolation	4.2	865	4.2	1,200	Extrapolated using current volumes and modal split with future airport passenger and employee levels.
Range of Alternative Scenarios	4.2 - 14.4	865 - 2,300	4.2 - 18.5	1,200 - 4,000	

In 1991 the peak hour transit demand is expected to be in the 800-1400 person range, while in 2011 a demand of up to 4,000 may occur. The figures that were presented in the GO-ALRT Study are generally held to be high due to an optimistic land use and development scenario (for instance the full GO-ALRT network is assumed to be in place) and a demand in the lower part of their range may be more accurate for 2011. This would be in the order of 2,000-3,000 persons in the peak hour. Increases in transit demand follow increases in modal split much more directly than increases in overall traffic, but without additional facilities or transit service and/or severe constraints on automobile access to the airport terminal area, it is difficult to foresee significant changes in overall modal split. Based on current transit use and forecast airport growth to 2011, a peak hour transit figure of only 1200 persons would result.

During the peak hour the directional split, based on current use, is approximately 2:1, thus the one-way peak hour demand would be about 2/3 of the aforementioned figures, or 800-2000 persons per hour in 2011.

Although the demand for transit service to Pearson International Airport is currently met by a variety of local and express bus routes, long term transportation plans have been developed that include potential rapid transit links between the airport and the regional networks. Such plans have been developed as a result of the Eglinton West Rapid Transit Line Study, the GO-ALRT Northern Section Study, the T.T.C. Long Range Plan, and the Intra-Airport Transportation Study.

In order to ensure that the possibility of eventual extension of rapid transit service to the airport is not precluded by development, the Airport Master Plan protects some property for transit use. In particular a 'people-mover' is envisaged to connect the terminals with a station on a rapid transit line close to Highway 427.

Nevertheless, the range of transit ridership scenarios analyzed to the year 2011 is well within the standard guidelines for passenger capacity of buses operating in mixed traffic. Hourly passenger capacity for 60 buses per hour is approximately 3, 000 per direction, depending to some extent on roadway operations, while buses operating on dedicated rights-of-way handle 5,000 passengers per hour per direction. Intermediate capacity transit systems (Light Rail, busways, etc.) have hourly passenger capacities in the 5,000 to 15,000 range, while subway capacity (for the Yonge/University/Spadina line) is 34,000 passengers per hour per direction.

5.6.2 York University

Since York University's establishment in northwestern Metropolitan Toronto in the 1960's, the provision of improved transit service between the University and the Toronto subway system has been a significant issue. Forecasts compiled by York University indicate that, over the forthcoming decades, the campus population of 40,000 students and faculty may quadruple, and portions of the 120 hectares of vacant University property are proposed to be leased for residential or business development. The lack of direct rapid transit service is perceived to limit access to the campus and may become a constraint on development of campus lands.

Current transit access to the campus is by four Toronto Transit Commission bus routes, linking the property with subway stations to the east and south. The nearest subway station is the Wilson terminus of the Spadina line, approximately 6 kilometres away, and York University officials have suggested a rapid transit link to the Wilson Station be considered.

A comprehensive survey of traffic entering and leaving the York University campus was carried out in December 1986 and February and March 1987 for the York University Development Corporation. Transit, walking and auto modes were counted between 7:30 a.m. and 7:30 p.m. on a typical weekday during the school term. The results of these two surveys are shown in Tables 5.15 and 5.16.

York University is anticipating significant long term growth - a quadrupling of students and faculty over the next few decades - but details on the timing and location of such growth is unavailable. If such growth is assumed to occur over 40 years, a 3.5% average annual growth rate would be implied. The T.T.C.'s Long Range Plan, published in 1983, forecasts an average annual system wide ridership increase in the 1981-1991 period of 1.4%.

Current transit use between Wilson Station and York University totals approximately 8,400 daily riders. The portion of this total in the a.m. peak hour inbound to the campus is approximately 1,350 (15%) as shown in the following table:

A.M. Peak Hour Transit Use
(8:15 - 9:15)

Campus Entrance	Inbound	Outbound
Jane	67	2
Keele	750	25
Steeles	158	30
York-Wilson	388	117
Total	1,363	174

Source: I.B.I. Traffic counts undertaken in February and March, 1987

The reverse move in the p.m. peak hour is diminished, due mainly to the spread of departure times from campus buildings. Outbound traffic in the a.m. peak hour is negligible, at 170 riders.

In 2001, under a 2% annual growth scenario, the peak hour peak direction demand in the proposed rapid transit corridor would be in the order of 1,650 riders, and in 2011 reach 2,000. A 3% average annual

TABLE 5.15

1987 TOTAL TRAFFIC AT YORK UNIVERSITY

Model	A.M. Peak Hour		P.M. Peak Hour		12 Hour	
	Trips	%	Trips	%	Trips	%
Auto	4,185	70.6	4,379	77.6	35,170	72.3
Transit	1,537	25.9	1,109	19.7	12,013	24.7
Walk	205	3.5	153	2.7	1,478	3.0
TOTAL	5,927	100.0	5,641	100.0	48,663	100.0

Note: Based on traffic counts undertaken in February and March, 1987

TABLE 5.16

1986 TRANSIT USE AT YORK UNIVERSITY

Bus Route	Survey Date		7 AM – 9 AM		4 PM – 7 PM		All Day (TTC)			12 Hour (IBI)		
	TTC	IBI	Inbound	Outbound	Inbound	Outbound	Inbound	Outbound	Total	Inbound	Outbound	Total
Jane St. 35	28.04.86	11.02.87	28	4	10	20	67	35	102	182	140	332
Keele St. 41	03.04.86	11.02.87	127	1	16	64	388	212	600	2,514	1,771	4,285
York Express	01.12.86		607	392	238	552	2,730	2,200	4,930			
Steeles Ave. 60	16.09.86	11.02.87	259	12	46	173	533	312	845	954	1,359	2,313
York–Wilson 106	06.10.86	04.03.87	747	46	309	912	2,401	2,693	5,094	2,883	2,210	5,093
TOTAL			1,768	455	619	1,721	6,119	5,452	11,571	6,533	5,480	12,013

growth in ridership would produce 1,900 passengers in 2001 and 2,550 in 2011 in the peak hour peak direction.

Although the provision of rapid transit service has the capacity to create demand through a shift in modal split, the diversity of origins and destinations of campus visitors, the high level of service offered by the existing express buses, the availability of extensive inexpensive on-campus parking, and the largely residential character of the University area, limit the impact of rapid transit on the mode of choice of commuters. The limited economic power of students has already influenced the modal split towards transit.

Although York University is planning to lease parts of its property for development, transit would be affected only in the case of additional employment on the site, as residential development would provide passengers mainly in the underutilized off-peak direction in peak periods.

Guidelines for passenger capacity per hour per direction of various transit modes include the following: For buses operating in mixed traffic (60 buses per hour) passenger capacity per direction is 3,000, rising to 5,000 for buses operating in exclusive lanes and up to 15,000 on busways. As previously mentioned, the capacity of the Yonge/University/Spadina subway line is 34,000 passengers per hour per direction.

It can be seen that buses operating in mixed flow are capable of accommodating the projected transit demand in the York University-Wilson station corridor under a wide variety of scenarios for the foreseeable future.

5.6.3 Summary of Needs

From this assessment of the issue of transit access to Pearson

International Airport and York University, the following conclusions are drawn:

- The inherent characteristics of both airport employees and users is such that demand for transit usage does not have the same peaking characteristics as normal morning and evening traffic patterns;
- Transit usage to the airport has remained stable through the 1980's and is unlikely to increase unless major changes are made to the supply and pricing of on-site parking;
- Future airport travel demands do not of themselves warrant a system that has a greater capacity than can be provided by buses operating on existing roadways, although they must be recognized in any overall assessment of corridor needs;
- York University is a major traffic generator and expects to experience significant growth over the upcoming decades. In addition to a projection by the University of a quadrupling of faculty and students, portions of the campus will be leased for residential and commercial development;
- Twenty-five percent of existing trips in and out of campus are made by transit, focussed on the corridor between the University and the Wilson Station terminus of the Spadina subway line. These corridor trips amount to approximately 1,350 passengers in the peak hour peak direction, served by a combination of local and non-stop express services operated by the T.T.C.;
- Under a variety of long-term growth scenarios, peak direction transit demand generated by the University could increase to the 2,000-2,500 passenger per hour range by 2011; and
- University travel demands do not of themselves warrant a system that has a greater capacity than can be provided by buses operating on existing roadways, although they must also be recognized in any overall assessment of corridor needs.

5.7 THE NEED FOR RAPID TRANSIT CORRIDORS SERVING THE NORTHWEST

From the assessment of transportation needs for the study area in general, the following specific conclusions with respect of the need for rapid transit corridors serving the northwest were drawn:

- The lack of road capacity at the York/Metro and Peel/Metro screenlines has identified the need to increase the transit modal split between the Regions and Metro. In particular there is currently a high dependency on the auto for short distance trips (50%-60% of total cross-boundary) into Metro;
    - As most of the job growth in North York is close to the Finch/Steeles corridor, a high speed east-west transit distributor would help considerably in attracting the necessary transit modal split across the boundary and support the North York City Centre;
    - Similarly, low transit modal splits into north and south Etobicoke from Peel Region, indicate that a north-south rapid transit line through Etobicoke would be highly desirable to increase transit modal split and distribute trips with widely dispersed O-D's.;
- Recognizing that cross-boundary rapid transit facilities may ultimately be required to achieve significantly higher transit modal splits, the Eglinton and Allen/Dufferin corridors should continue to be protected;
- The analysis of the effects of Highway 407 on Highway 401 has shown that the demand on Highway 401 will continue to grow and that Highway 401 will not be able to accommodate the projected demand, indicating the need for additional east-west capacity through the northern section of the study area; and
- The ongoing development of the Islington/Kipling and particularly the North York City Centre is predicated on increased transit access in line with the goals of decentralization as expressed in "the Metro Official Plan".

It should be noted that, with respect to east-west distribution north of Highway 401 and the north-south Etobicoke distributor, TTC and Metro staff are addressing the feasibility of providing such rapid transit corridors and the extent to which formal measures are required for corridor protection through the ongoing Northwest Metro Rapid Transit Corridor Study.

5.8 ROAD SYSTEM DISCONTINUITIES/BOTTLENECKS

A discontinuity in the road system can potentially impose:

- severe congestion impacts on roads in the vicinity of the discontinuity;
- the need for circuitous routing for certain trips which has a monetary and environmental impact;
- unnecessary impact on the local road (e.g. residential streets) system and hence community impacts;
- costs on transit services due to extra route length and time which can result in additional vehicle requirements as well as operating costs; and
- restrictions to the development potential of an area.

For these reasons a review of discontinuities and bottlenecks in the road system serving northwest Metro was undertaken as part of this study.

The location of railway lines and rivers have combined to prohibit the development of a continuous road grid in Metro. With the exception of roads in the vicinity of the Don River in east Metro, west and northwest Metro have the most discontinuous network. Exhibit 21 shows the main arterials in the study area which end at T-intersections and hence result in a break in the grid. The airport and a shift in orientation of the grid in Peel Region also sustain the grid discontinuity to the west of north Etobicoke as parallel east-west roads (at the boundary) join together a short distance west of the boundary.

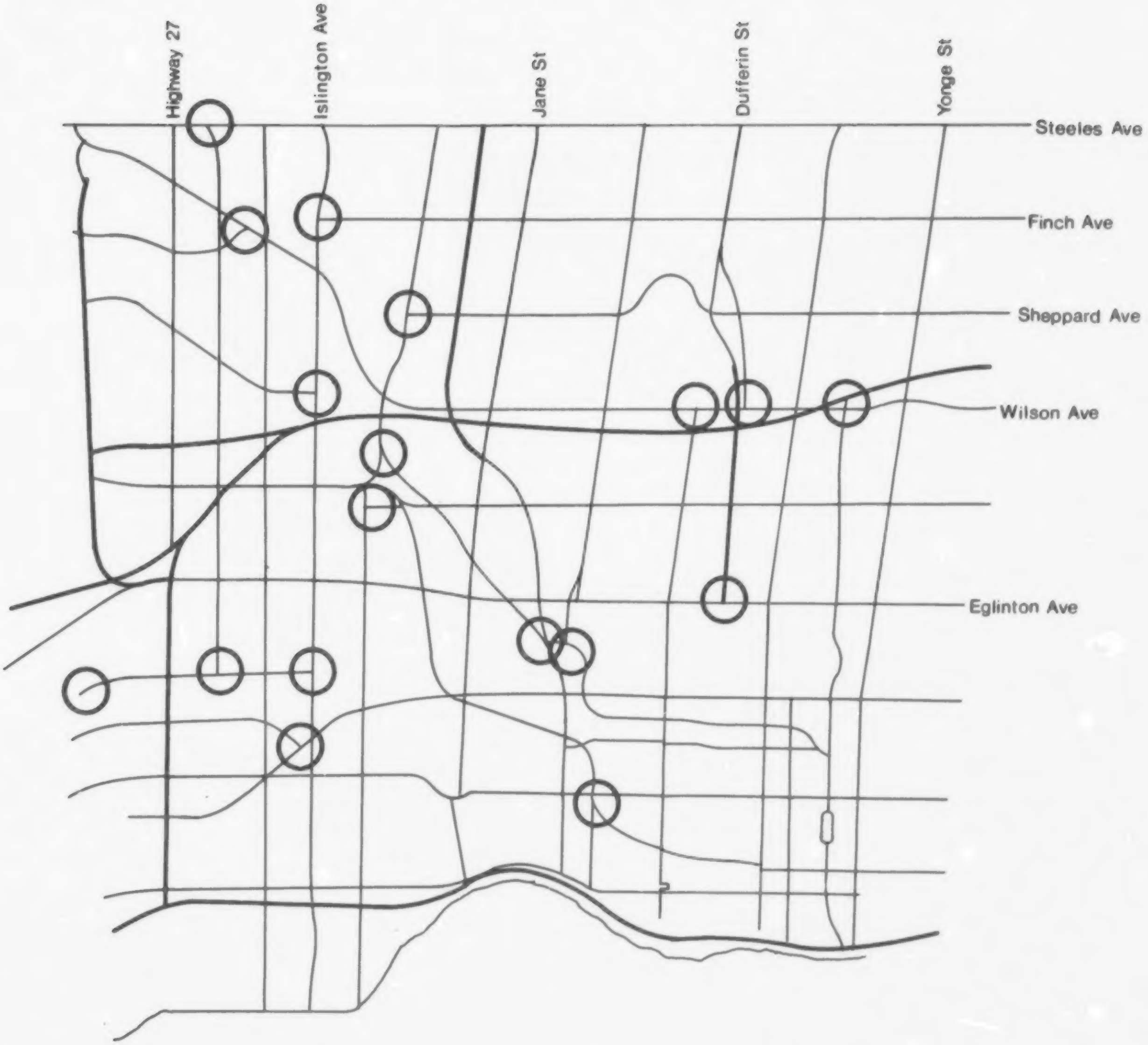

Highway 27
Islington Ave
Jane St
Dufferin St
Yonge St
Steeles Ave
Finch Ave
Sheppard Ave
Wilson Ave
Eglinton Ave

EXHIBIT 21: ROAD LINK DISCONTINUITIES IN THE STUDY AREA

The main discontinuities or jogs in the Metropolitan arterial road system in the study area are:

- i) Allen Road at Eglinton Avenue;
- ii) Black Creek Drive at Weston Road; and
- iii) Sheppard, Wilson and Finch Avenues across the Humber River.

These discontinuities are addressed in varying detail in the sections following, while other links are discussed in general terms in a later section.

In order to address current conditions in the vicinity of specific discontinuities a volume/capacity analysis was undertaken. Certain qualifiers are needed in respect of particular aspects of this analysis. Firstly, the traffic volumes were taken from a one day eight hour manual traffic count within the last two years. Consequently, the analysis only provides a "snap shot" of traffic conditions and does not account for variations in weather and road conditions and daily fluctuations in traffic volumes. Secondly, v/c ratios are not the best illustration of level of service offered by a particular intersection or roadway. Progression and speed/delay are more succinct indicators. Thirdly, the analysis used in the v/c calculations do not take into account the right turns made on 'red'. This qualification is taken into account when discussing the data.

5.8.1 Allen Road at Eglinton Avenue

Current Conditions

Allen Road currently terminates at Eglinton Avenue West. Among the potentially affected intersections by this discontinuity are the following:

- o Allen Road and Eglington Avenue West (East Ramp);
- o Allen Road and Eglinton Avenue West (West Ramp);
- o Allen Road and Lawrence Avenue West (East Ramp);

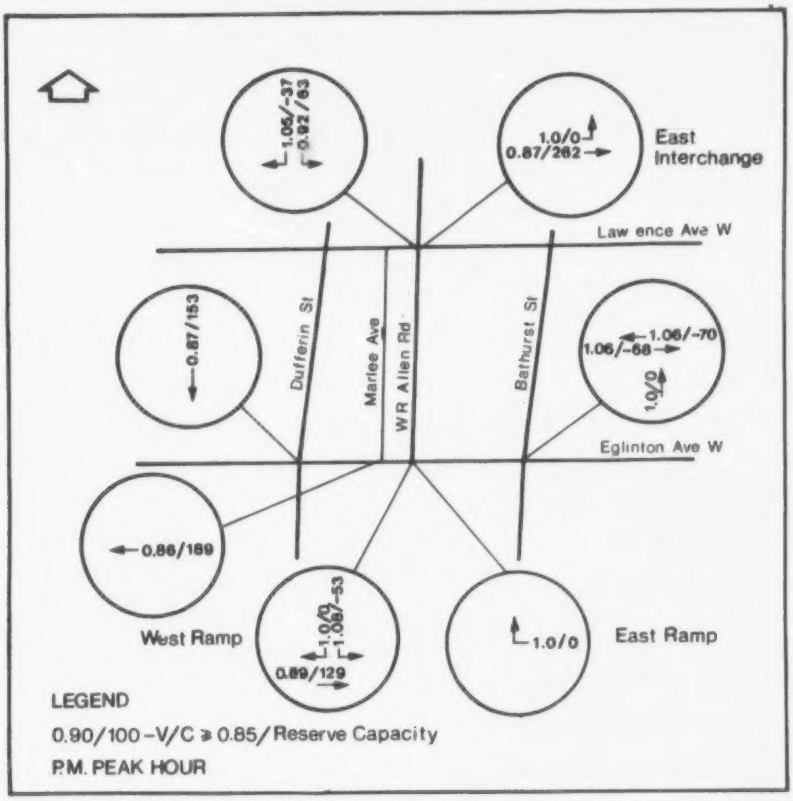
- Allen Road and Lawrence Avenue West (West Ramp);
- Eglinton Avenue West and Bathurst Street;
- Eglinton Avenue West and Marlee Avenue; and
- Eglinton Avenue West and Dufferin Street. (It should be noted that the impacts of Allen Road traffic at Dufferin Street are cushioned due to the filtering effect of the Eglinton/Oakwood intersection).

While the intersections south of Eglinton Avenue are also potentially impacted, the above are thought to be a representative sample adequate to describe existing conditions in the main area of impact close to the discontinuity.

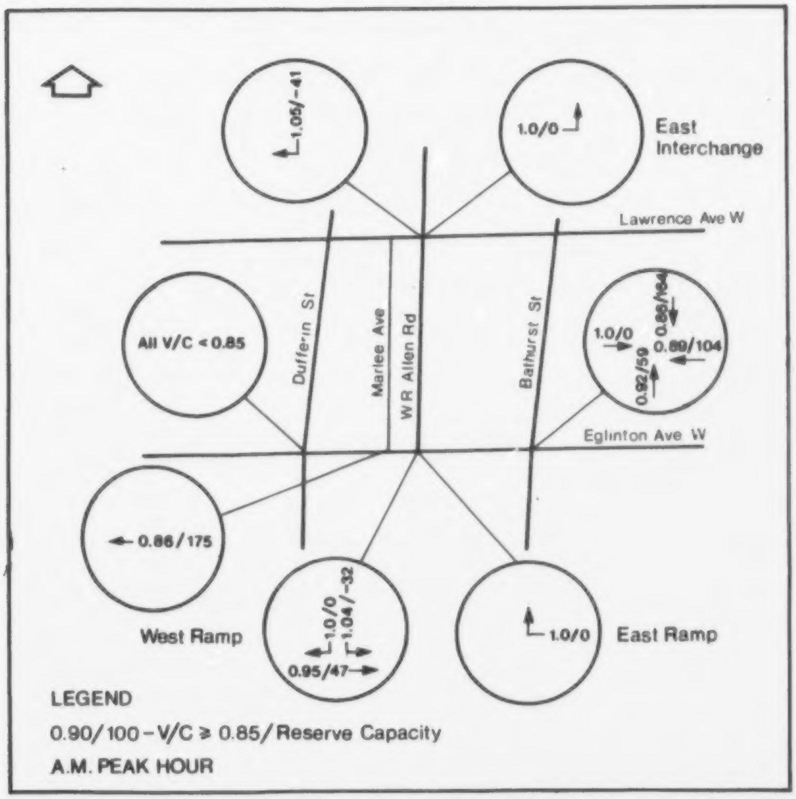
The A.M. and P.M. peak hour ratios and reserve capacities for the critical movements of the above intersections are shown in Exhibit 22. The figures show that key turning movements at all the above intersections are close to or at capacity. This data, however, only hints at the enormous delays traffic is subjected to in exiting from the Allen Road at Eglinton Avenue as well as the further impacting of residential streets further downstream by traffic trying to steer clear of the congestion on the arterial road system which is caused to a large degree by this discontinuity. Exhibit 23 is reproduced from the Metro report on the "Spadina Corridor Licence Plate Origin/Destination Survey "(April, 1980), and shows that approximately 40% of the traffic on the Allen Road at that time, would have exited further south, if the link continued below Eglinton Avenue.

Forecasts

Forecasting travel demand for individual road links is an extremely difficult task. Additionally, while forecasts do not show a major growth in demand in the central corridor across the north boundary of the Central Area, nevertheless the nature of the demand is changing. The inter-regional element (i.e. York Region to Metro) crossing southbound at screenline 28 (immediately north of Eglinton Avenue) currently is

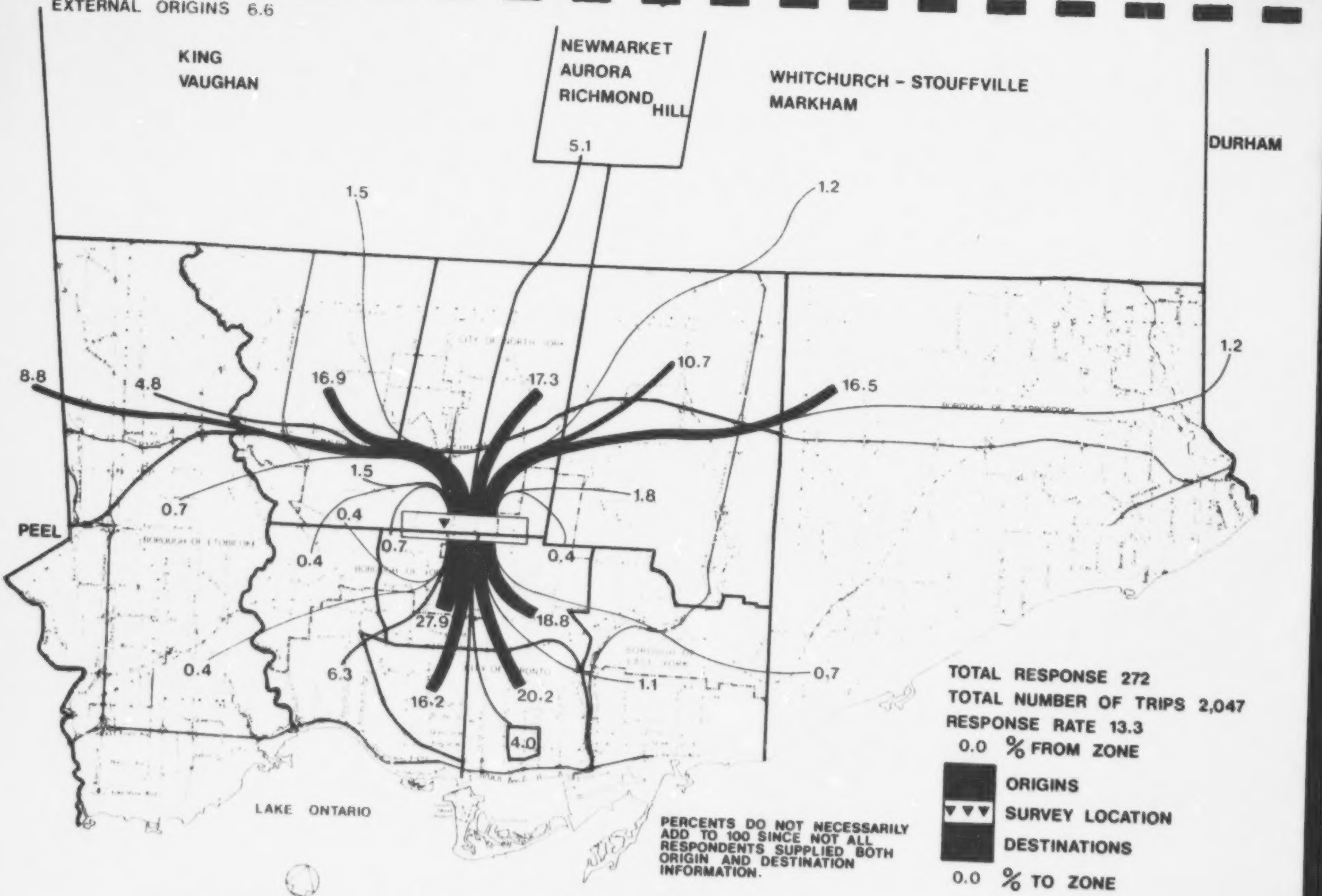

1.05/-37
0.92/63
1.0/0
0.87/262
East Interchange
Law ence Ave W
0.87/153
Dufferin St
Marlee Ave
W R Allen Rd
Bathurst St
1.06/-70
1.06/-68
1.0/0
Eglinton Ave W
0.86/169
1.0/0
1.08/-53
0.89/129
West Ramp
1.0/0
East Ramp

LEGEND
0.90/100 – V/C ≥ 0.85/Reserve Capacity
P.M. PEAK HOUR


1.05/-41
1.0/0
East Interchange
Lawrence Ave W
All V/C < 0.85
Dufferin St
Marlee Ave
W R Allen Rd
Bathurst St
1.0/0
0.86/164
0.89/104
0.92/59
Eglinton Ave W
0.86/175
1.0/0
1.04/-32
0.95/47
West Ramp
1.0/0
East Ramp

LEGEND
0.90/100 – V/C ≥ 0.85/Reserve Capacity
A.M. PEAK HOUR

EXHIBIT 22: CRITICAL V/ AND RESERVE CAPACITY
W.R. ALLEN ROAD


EXTERNAL ORIGINS 6.6
KING
VAUGHAN
NEWMARKET
AURORA
RICHMOND HILL
5.1
WHITCHURCH - STOUFFVILLE
MARKHAM
DURHAM
1.5
1.2
1.2
8.8
4.8
16.9
17.3
10.7
16.5
1.5
1.8
0.7
0.4
PEEL
0.7
0.4
0.4
27.9
18.8
0.4
6.3
16.2
20.2
1.1
0.7
4.0
LAKE ONTARIO
TOTAL RESPONSE 272
TOTAL NUMBER OF TRIPS 2,047
RESPONSE RATE 13.3
0.0 % FROM ZONE
ORIGINS
▼▼▼ SURVEY LOCATION
DESTINATIONS
0.0 % TO ZONE

PERCENTS DO NOT NECESSARILY ADD TO 100 SINCE NOT ALL RESPONDENTS SUPPLIED BOTH ORIGIN AND DESTINATION INFORMATION.

SOURCE: 1979 SURVEY

EXHIBIT 23:
SPADINA CORRIDOR LICENSE PLATE ORIGIN - DESTINATION SURVEY 7 A.M. - 9 A.M. SOUTHBOUND W.R. ALLEN RD.

10%; this is forecast to increase to 22% by 2011. This is a distinct phenomenon indicated by the forecasts in that peak period travel on Metro roads will be less by Metro residents and more by residents of the adjacent Regions. As longer distance trips tend to be on the expressway system, and, if it is assumed that the necessary capacity is available, then major increases on the expressways can be expected with a decrease on many parts of the arterial road system. This is illustrated by the 'all-or-nothing' assignment result which shows 1,300 of the 1,400 increase in person trip assignments for screenline 28 to be on the Allen Road. The remainder of the roads show either a small increase or a decline.

However, in this particular case Allen Road is already at capacity and in the absence of improvements the increase in inter-regional travel demand would have to take place on the arterial road system, using available capacity vacated by the declining local auto trip making.

Exhibit 26 illustrates the travel demand forecasts* for screenline 28 (immediately north of Eglinton Avenue between the CN Newmarket and Bala subdivisions). This shows the auto travel demand to increase very little over the next 24 years (1,400 person trips). If M.T.O. land use forecasts were used, the inter-regional demand would be 17% to 33% higher (an additional 350 to 895 trips); alternatively, if full service on the GO system is initiated, this could theoretically reduce auto demand by 722 trips if a full 80% market share is achieved, similar to the current Lakeshore services. The likely diversion to GO is probably much less than this. At the maximum, (assuming M.T.O. high growth and no further diversion to GO), an extra 2,300 auto person trips (by 2011) can be expected. Assuming a 1.24 vehicle occupancy factor and a 10% truck content, this worst case scenario would lead to an increase in 2,000 vehicles between 1981 and 2011.

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* It should be noted that the model under - assigns auto trips to this screenline and over-assigns to screenline 27 and therefore validates over a longer screenline. Forecasts show little growths for either screenline as it happens.

Table 5.17 shows the 1985 v/c ratio for screenline 28 to be 0.86 (13391/15570). This means that the screenline as a whole should have just enough capacity for the high growth long term forecast, although individual links would be at capacity as traffic would not distribute to various roads in direct proportion to the available capacity; a 0.90 v/c ratio on a corridor basis is perhaps a better indicator of capacity conditions. A shift to transit is of course possible with expansion of GO Rail services from the north.

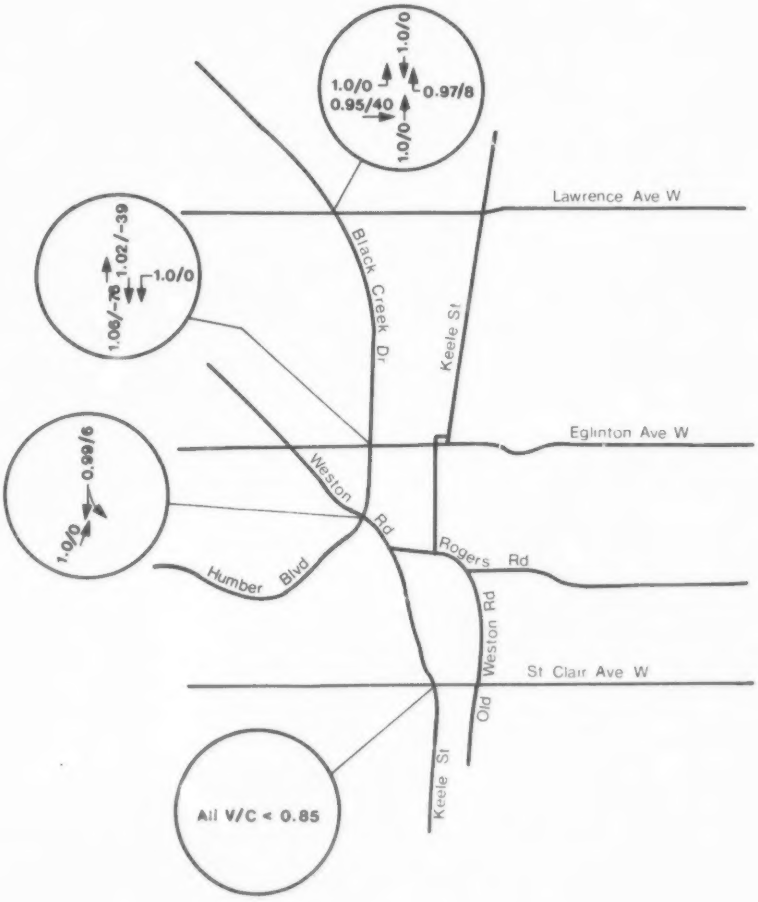
Additional Turning Lanes at Allen Road/Eglinton

As noted earlier, the west ramp (southbound to Eglinton Avenue) is experiencing excessive long queues in peak and off peak times. The terms of reference for this study include the need to assess the desirability of adding additional turning lanes at the T-intersection. The current single left and right turning lanes at the west ramp handle above 800 vehicles each in the peak hour. It is therefore possible that up to an additional 800 vehicles through the intersection would be accommodated by the addition of either a right turn or a left turn lane, however, an examination of intersection capacity downstream (east and west) of the intersection shows there to be essentially no residual capacity available.

The effect of installing additional turning lanes on the west ramp would be to effectively transfer the queue of southbound traffic currently on the west ramp to the already congested Eglinton Avenue, thus exacerbating a major bottleneck. It is therefore concluded that it is not desirable to add extra southbound turning lanes on the west ramps of Allen Road at Eglinton Avenue West unless major downstream intersection improvements and road widenings were carried out to accommodate the extra traffic.

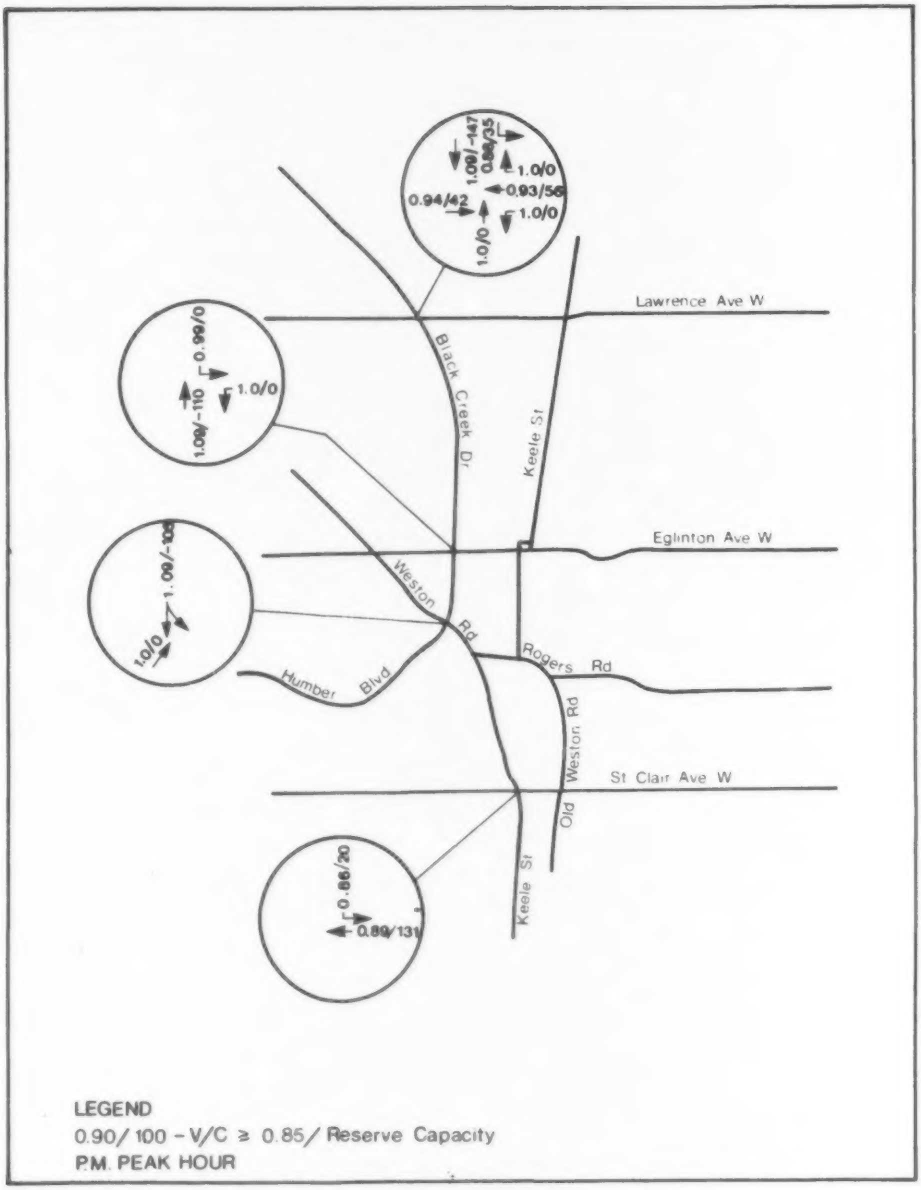
Summary

The case for establishing the need to extend Allen Road is summarized by the following:


1.0/0
1.0/0
0.97/8
0.95/40
1.0/0
1.02/-39
1.0/0
1.06/-78
0.99/6
1.0/0
All V/C < 0.85
Lawrence Ave W
Black Creek Dr
Keele St
Eglinton Ave W
Weston Rd
Rogers Rd
Humber Blvd
Weston Rd
Old
St Clair Ave W
Keele St

LEGEND
0.90/ 100 - V/C ≥ 0.85/ Reserve Capacity
A.M. PEAK HOUR

EXHIBIT 24:
CRITICAL V/C AND RESERVE CAPACITY
BLACK CREEK DRIVE


1.09/-147
0.89/35
1.0/0
0.93/56
0.94/42
1.0/0
1.0/0
Lawrence Ave W
0.99/0
1.0/0
1.09/-110
Black Creek Dr
Keele St
Eglinton Ave W
1.09/-10
1.0/0
Weston Rd
Rogers Rd
Humber Blvd
Old Weston Rd
St Clair Ave W
Keele St
0.86/20
0.89/131

LEGEND
0.90/ 100 - V/C ≥ 0.85/ Reserve Capacity
P.M. PEAK HOUR

EXHIBIT 25:
CRITICAL V/C AND RESERVE CAPACITY
BLACK CREEK DRIVE

EXHIBIT 26: TRAVEL DEMAND FORECASTS
(North of Eglinton Avenue between CN Newmarket and Bala Subdivisions)

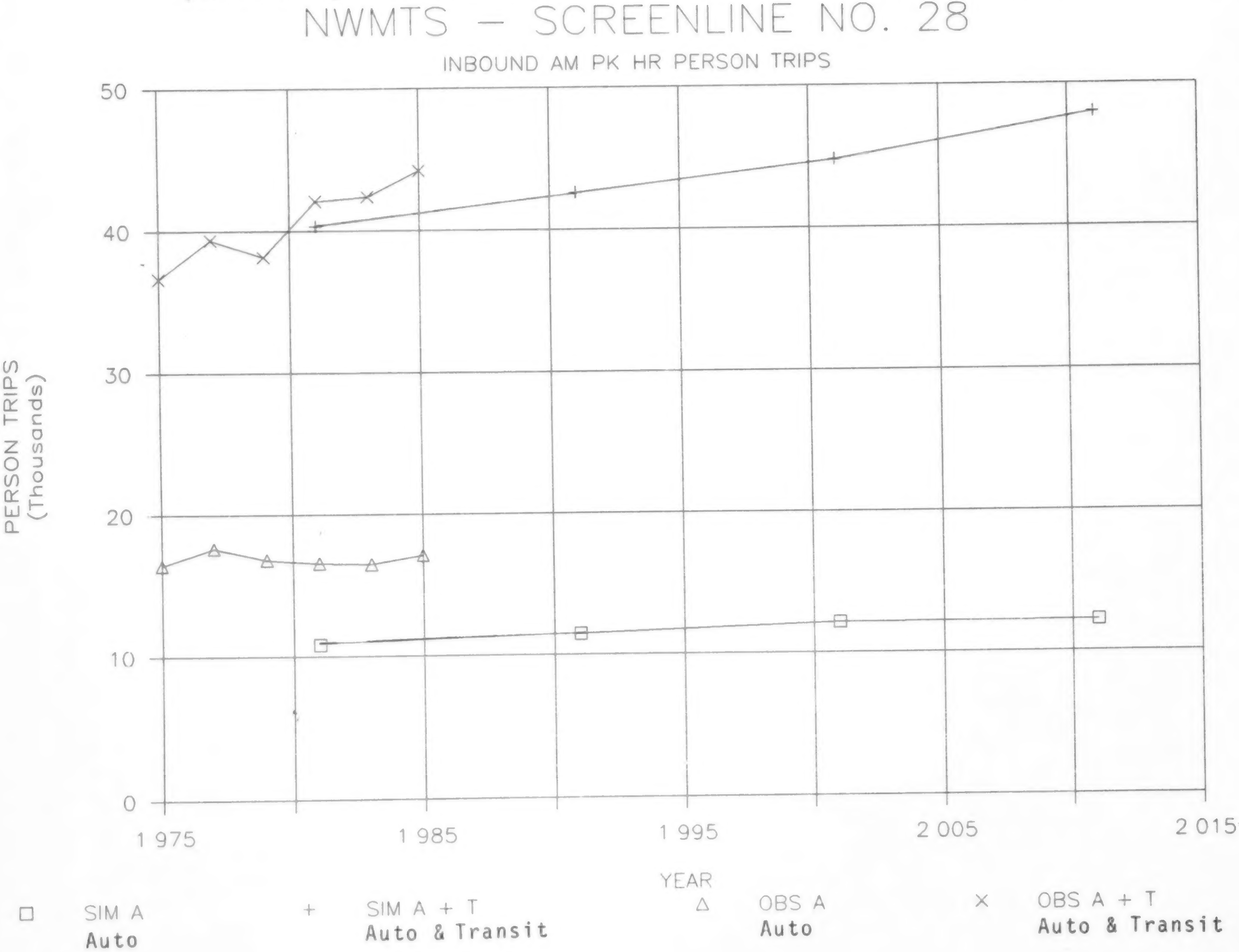


TABLE 5.17

VOLUME/CAPACITY ANALYSIS FOR SCREENLINES 27 and 28

NORTH OF EGLINTON AVENUE

Screenline (North of Eglinton)	# Lanes 2-Way	Capacity		Count (1985)		V/C	
		In	Out	In	Out	In	Out
#27							
Jane Street	4	1,950	1,950	727	734	0.37	0.38
Weston Road	4	1,560	1,560	423	397	0.27	0.25
Black Creek Drive	4	1,950	1,950	1,190	1,240	0.61	0.64
Trethewey Drive*	4	1,560	1,560	1,111	1,246	0.70	0.74
Total		7,020	7,020	3,451	3,617	0.49	0.52
#28							
Dufferin Street	4	1,560	1,560	1,004	961	0.64	0.62
Caldeonia Road	2	800	800	521	582	0.65	0.73
Allen Road	4	1,710	2,200	1,708	2,001	1.00	0.91
Bathurst Street	4	1,560	1,560	1,320	732	0.85	0.47
Avenue Road	4	1,950	1,950	1,663	737	0.85	0.38
Yonge Street	4	1,950	1,950	1,641	574	0.84	0.29
Mount Pleasant	4	1,950	1,950	1,549	859	0.79	0.44
Bayview Avenue	4	2,340	2,340	2,251	1,514	0.96	0.65
Leslie Street	4	1,750	1,750	1,734	744	0.99	0.43
Total	34	15,570	15,080	13,391	8,704	0.86	0.58

* Keele Street and Trethewey Drive counts are combined at this location

- large delays on Allen Road are currently experienced in the traditional weekday peak periods and in many 'non' peak periods (e.g. weekends);
- large delays are also experienced on Eglinton Avenue either side of Allen Road intersection due to expressway volumes having to exit onto a relatively low grade arterial road;
- impacts are being experienced on other streets including Avenue Road, Bathurst Street and Dufferin Street by traffic continuing their journey further south;
- infiltration of traffic onto local residential streets is occurring to avoid the congestion on the arterial road system;
- operational improvements are unlikely to improve conditions without significant improvements downstream; and
- the only further viable transit improvement to the corridor is the construction of additional park-n-ride facilities along the Allen Road. However, it is not clear whether this approach would reduce traffic volumes significantly at Eglinton Avenue.

The case for making improvements to the Allen Road discontinuity, due to current impacts, is the most impressive of all the discontinuities considered. This is because it is the discontinuity of an "expressway standard" road suddenly terminating at an arterial road, rather than simply a break in the arterial road system itself. In regard to the future traffic growth expected, the forecasts show very little auto traffic growth from the north across the Eglinton screenline as a whole. There is a difficulty in interpreting this forecast, as despite their being little overall growth, there is a very important change in the nature of that demand (i.e. a doubling of inter-regional trips over the next 24 years). This growth in inter-regional (i.e. long distance) traffic would normally be expressway type traffic if a continuous link was available, which is not the case through this central north-south corridor.

However, a large increase in traffic is forecast for the QEW/Gardiner corridor which likely cannot be handled by the widening of the Gardiner Expressway currently being considered. Implementation of Traffic Systems Management measures such as H.O.V. lanes and/or reversible lanes would be one approach to increase the utilization of the QEW/Gardiner corridor which should be considered, as well as the GO Transit improvements previously mentioned. If further capacity is needed beyond this, an improved north-west corridor is a means of relieving pressure on the QEW/Gardiner corridor as analysis has shown the potential diversion is in the order of 8% to 11%. The higher diversion figure would more likely be achieved by an extension of Black Creek Drive rather than an extension of Allen Road due to its more westerly orientation.

5.8.2 Black Creek Drive at Weston Road

Current Conditions

The southerly terminus of Black Creek Drive is at Weston Road. The Black Creek Drive Travel Monitoring Study found that after the link was constructed, it relieved parallel roads (e.g. Weston Road, Jane Street and Keele Street), while not attracting any additional traffic. The following intersections are there fore included in the analysis of current conditions:

- Black Creek Drive and Weston Road;
- Black Creek Drive and Eglinton Avenue West;
- Black Creek Drive and Lawrence Avenue West; and
- St. Clair Avenue West and Keele Street

The v/c ratios and reserve capacities for the critical movements of these intersectins are shown in Exhibits 24 and 25 respectively. Capacity conditions can be seen for numerous turning movements in the corridor. These conditions were identified in the recent St.Clair/Weston Road Traffic Management Study which recognized the need for intersection improvements at:

- Eglinton Avenue/Jane Street;
- Eglinton Avenue/Black Creek Drive;

- Eglinton Avenue/Keele Street;
- Weston Road/Rogers Road;
- Keele Street/Rogers Road;
- St. Clair Avenue/Weston Road; and
- St. Clair Avenue/Old Weston Road.

Delay experienced in the vicinity of the Black Creek Drive discontinuity is not nearly as great as that experienced for Allen Road.

In examining the Black Creek corridor as a whole, (defined in this instance, as screenline 27, immediately north of Eglinton Avenue between the Humber River and CN Newmarket Subdivision), a 1981 select link simulation was used which included Black Creek Drive in the network (even though it was not built until 1982). This shows only 13% of the traffic having a Central Area destination. The majority of the traffic (71%) is destined to PD2 and PD3 (i.e. York and west Toronto). The corridor is therefore, providing service to a large part of the inner urban area. Black Creek Drive has been an important addition to the road system for the older inner urban area of northwest Metro, particularly in providing an important connection to Highway 401.

Forecasts

The same comments for Allen Road with respect to inter-regional trips replacing local trips also applies to Black Creek Drive as screenline 27 (immediately north of Eglinton Avenue between the Humber River and the CN Newmarket subdivision) is shown to have a 15% inter-regional content in 1981 and 25% by 2011. An increase of 400 auto person trips for the screenline as a whole is forecast (see Exhibit 27). Based on an existing v/c of 0.49 (Table 5.17) this magnitude of increase, even if a higher growth scenario is used plus truck volumes included and no shift to transit is assumed, is easily accommodated on a screenline basis.

Summary

The case for establishing the need to extend Black Creek Drive is summarized by the following:

- close to capacity conditions for many turning movements at Black Creek Drive intersections, although intersection improvements are possible (e.g. right turn lanes, and possibly grade-separation of Lawrence and Eglinton);
- discontinuity does impact on these intersections in the vicinity of the discontinuity, but not to the same degree to which the Allen Road discontinuity impacts on intersections in the Allen/Eglinton area; and
- St. Clair Avenue/Weston Road Traffic Management Study has recommended intersection improvements in the area (Rogers Road and St. Clair Avenue at both Weston and Old Weston Road).

A 'lost opportunity' issue connected with the discontinuity of Allen Road and Black Creek Drive is the issue of the viability of either maintaining or increasing industrial activity in the area south of Highway 401 and east of the Humber River. The Metropolitan Toronto Goods Movement Study suggested that the trend of declining manufacturing jobs in the inner urban areas could continue with "poor transportation access" being one (but not the only) factor determining this trend. Improving access to Highway 401 by extension of one or both of these roads is therefore a potential tool to encourage industrial activity in this inner urban area and effectively bring the expanding market place in the regions closer. Due to the location of the industrial areas in this part of Metro, a Black Creek Drive extension would penetrate the older industrial areas much more so than an extended Allen Road, which is more to the east. This would be particularly true for an extension alignment of Black Creek Drive which follows the CN rail corridor and hence would serve well the older railway inspired development.

5.8.3 Discontinuities at the Humber River

The road system between Highway 401 and Steeles Avenue which straddles the Humber River, is almost entirely discontinuous on an east-west basis. The two roads crossing the river in this corridor, are a combination of north-south (Islington Avenue) and angled roads (Albion Road), while the basic east-west grid arterials (Finch Avenue, Sheppard Avenue and Wilson Avenue) are not continuous. It should be noted however, that the extension of Finch Avenue West was recently approved by the Environmental Assessment Board. The result is the need to make extremely circuitous routes for east-west trips across the Humber River. To compound this situation is the fact that Highway 401 at the Humber is the scene of the major bottleneck for this particular expressway.

Finch Avenue and Sheppard Avenue

The potentially effected intersections are listed below:

- Finch Avenue West and Islington Avenue;
- Islington Avenue and Albion Road;
- Kipling Avenue and Albion Road; and
- Sheppard Avenue West and Weston Road.

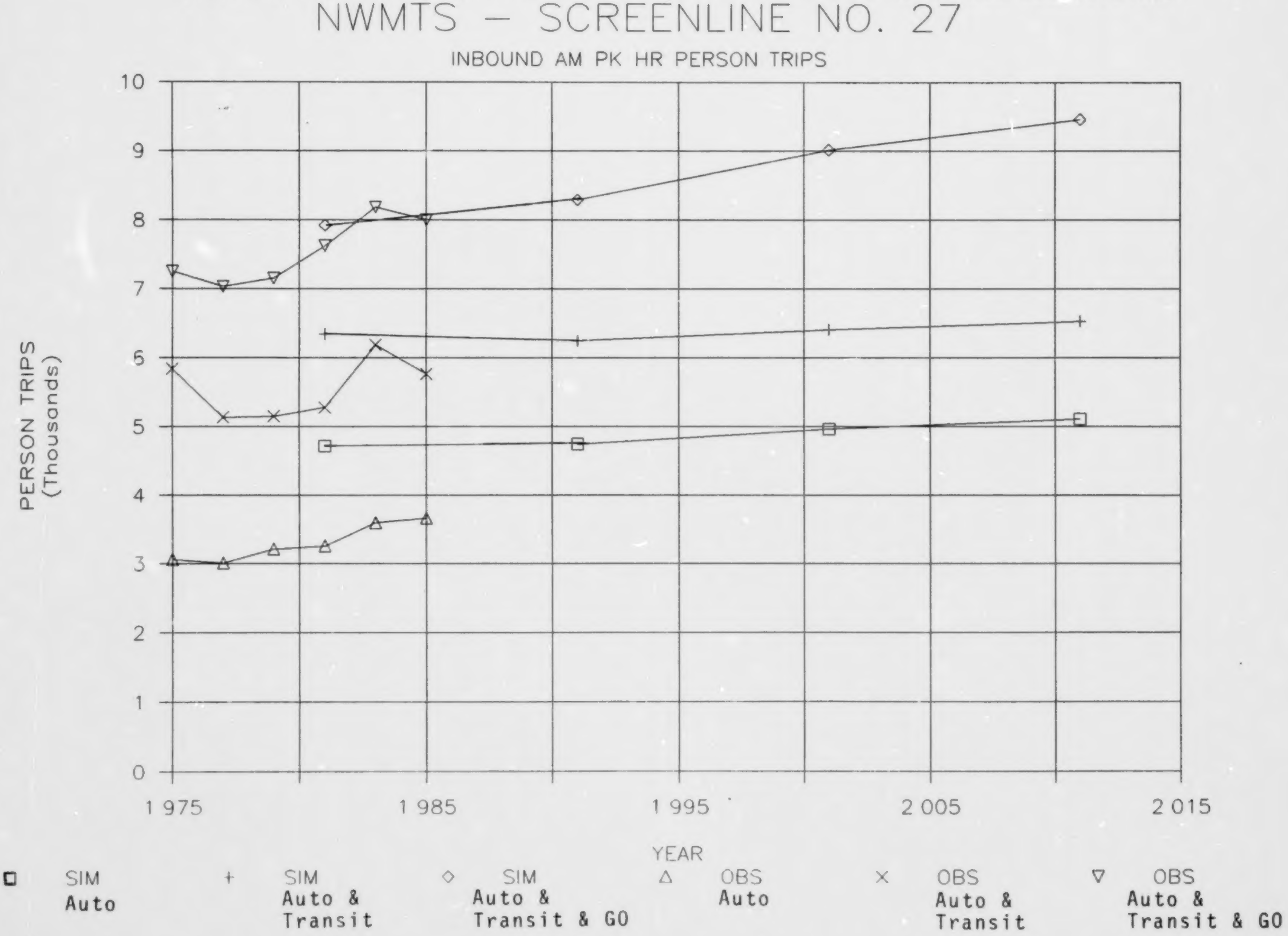
The v/c ratios and reserve capacities for the critical movements of the above intersections are shown in Exhibits 28 and 29 respectively.

In the a.m. peak period the following turns are operating at, or close to, capacity:

- the southbound left turn movement at Kipling Avenue and Albion Road;
- the eastbound left turn movement at Albion Road and Islington Avenue;
- the northbound right turn at Islington Avenue and Finch Avenue; and
- the southbound left turn at Finch and Islington.

In the a.m. peak hour, all movements at the Sheppard and Weston intersection are operating at below 85% of their capacity. In the p.m. peak period the westbound left turn, southbound left turn and northbound right turn are operating at above capacity.

EXHIBIT 27: TRAVEL DEMAND FORECASTS
(North of Eglinton Avenue between Humber River and CN Newmarket Subdivision)



Wilson Avenue

The westerly terminus of Wilson Avenue is at Albion Road, but it could continue on in the westbound direction to Rexdale Boulevard west of Islington Avenue. This 'missing link' is included in the Metropolitan Official Plan. The potentially affected intersections are listed as follows:

- o Wilson Avenue and Jane Street; and
- o Albion Road and Weston Road Interchange (no recent data available).

The a.m. and p.m. v/c ratios and reserve capacities for the critical movements of the Wilson/Jane intersection are shown in Exhibit 28 and 29 respectively. In the a.m. peak period, only the westbound left turn movement is operating above capacity. The northbound left turn, eastbound left turn and southbound through movements are functioning at close to capacity. In the p.m. peak period three turning movements (the eastbound left turn, southbound left turn and westbound left turn movements) are operating at above capacity. The northbound left turn movement is functioning at close to capacity.

Current Screenline V/C ratios and Forecasts (Screenline 20, Humber River north of Highway 401)

It is forecast (M1-86 land use) that between 1987 and 2011, there will be an increase of approximately 6,350 vehicles crossing this screenline. 1987 Cordon Count volumes capacities and v/c ratios by roadway are listed as follows:

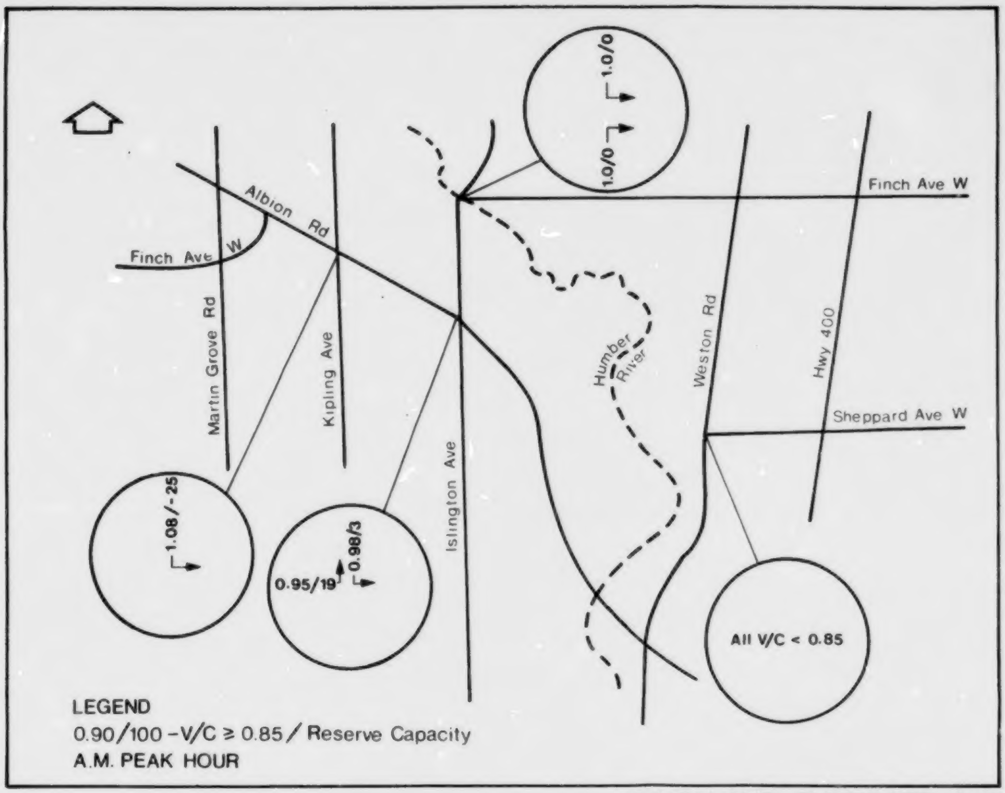
Roadway	**Travel Direction**	**1987 Volumes**	**Roadway Capacity**	**V/C**
Steeles Avenue	EB	1,681	1,950	0.86
Islington Avenue*	NB	733	975	0.75
Albion Road	EB	1,928	2,340	0.82
Highway 401	EB	11,198	12,000	0.93
Total		16,090	17,265	0.93

*** Note: Of the Islington Avenue northbound lanes at the Finch Avenue intersection, only the exclusive northbound right turn lane contributes to eastbound travel. Hence the volume and capacity presented are for this movement only.**

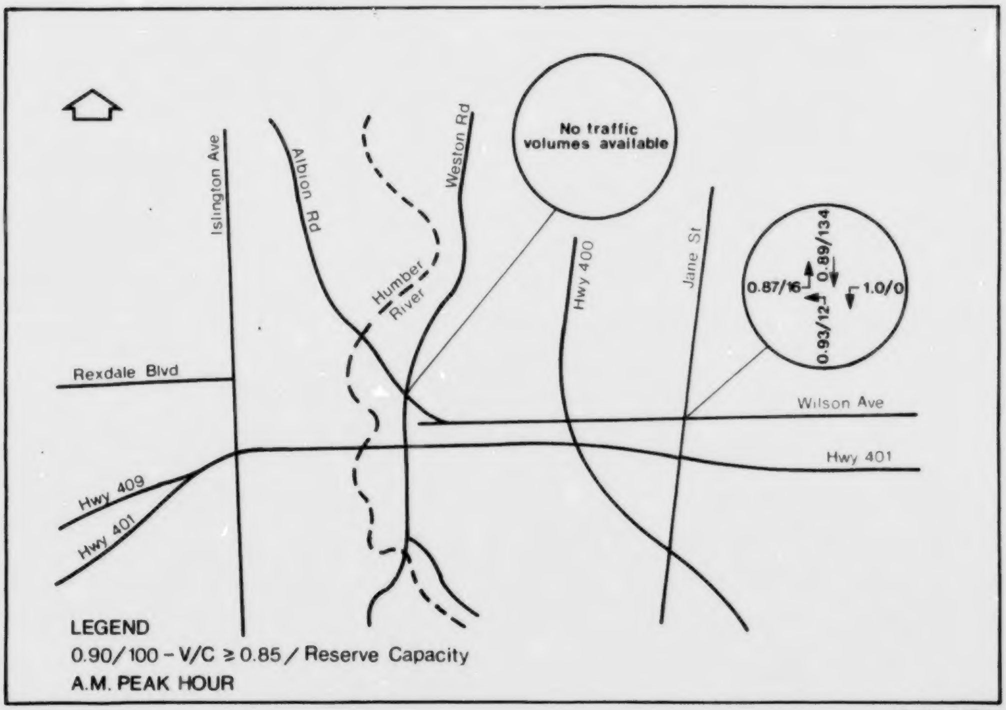
As shown from above, nearly all of the roadways which cross this screenline are currently operating at close to capacity. An excess of about 5,200 vehicles will still have to be accommodated when the demand volumes reach the screenline capacity. The planned widening of Steeles Avenue for an additional lane in each direction will increase the inbound capacity by approximately 1,000 vehicles; the connection of Finch Avenue West between Albion and Islington would effectively add about 1,200 vehicles to the inbound capacity; and the connection of Wilson Avenue between Weston Road and Rexdale Boulevard would add two lanes in each direction and potentially another 2,400 vehicle capacity. With these improvements, there would remain about 500 peak hour vehicles not accommodated for. Of course Highway 407 would be expected to divert some traffic away from the screenline. Almost all of the increase in demand in this area is inter-regional and therefore likely to be exerted mainly on the expressway system. However, completion of these discontinuous links (particularly the Wilson Avenue extension) could potentially divert some local trips which are currently forced to use Highway 401 and thereby reduce the impact on the expressway system. An O-D survey of trips currently using Highway 401 would have to be conducted to confirm this.

Summary

The proposal to extend Finch Avenue across the Humber River has recently been recently approved by the Environmental Assessment Board, and is awaiting a final Ministerial decision. The extension of Wilson Avenue is included in the Metropolitan Official Plan and will be required to meet future demands. In fact, the Wilson Avenue extension may be justified in the near term if an O-D survey of traffic on Highway 401 shows a significant amount of local traffic using the congested expressway which might otherwise use Wilson Avenue if it were continuous to Rexdale Boulevard. If Finch Avenue and Wilson Avenue are ultimately extended, the extension of Sheppard Avenue to Albion Road may not be required.

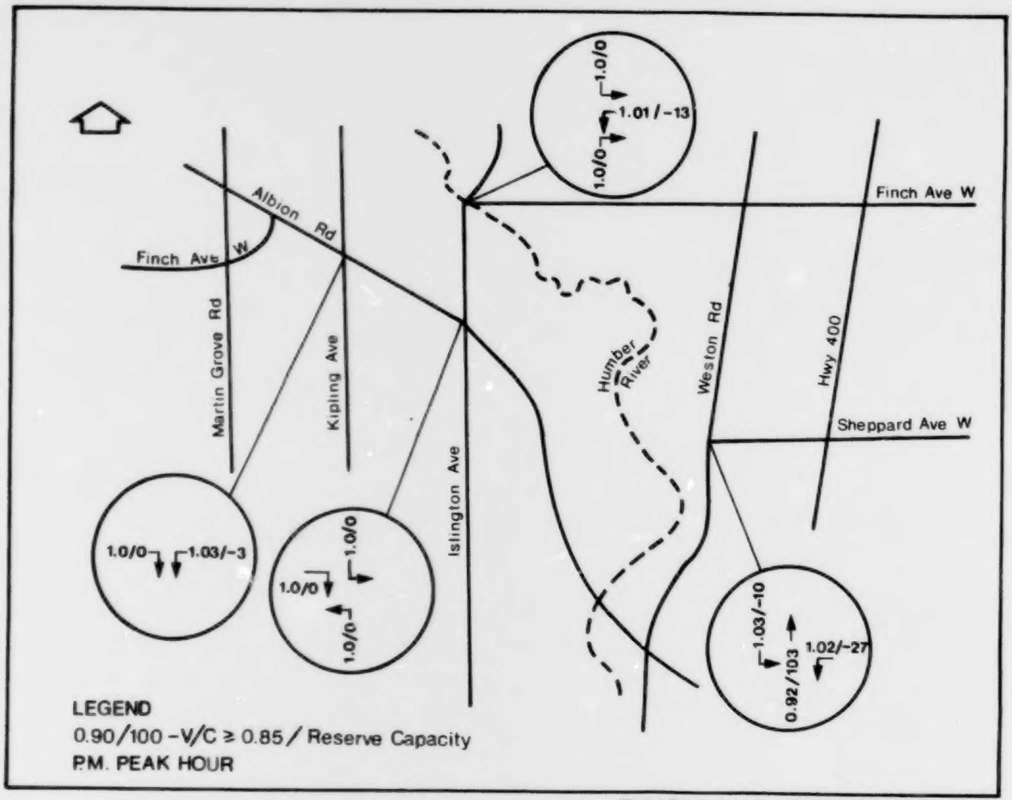

1.0/0
1.0/0
Finch Ave W
Albion Rd
Finch Ave W
Martin Grove Rd
Kipling Ave
Islington Ave
Humber River
Weston Rd
Hwy 400
Sheppard Ave W
1.08/-25
0.98/3
0.95/19
All V/C < 0.85
LEGEND
0.90/100 - V/C ≥ 0.85 / Reserve Capacity
A.M. PEAK HOUR

FINCH AND SHEPPARD AVE.


Islington Ave
Albion Rd
Humber River
Weston Rd
No traffic volumes available
Hwy 400
Jane St
0.89/134
0.87/16
1.0/0
0.93/12
Rexdale Blvd
Wilson Ave
Hwy 401
Hwy 409
Hwy 401
LEGEND
0.90/100 - V/C ≥ 0.85 / Reserve Capacity
A.M. PEAK HOUR

WILSON

EXHIBIT 28:
CRITICAL V/C AND RESERVE CAPACITY
WILSON AVENUE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1.01/-13
1.0/0
Albion Rd
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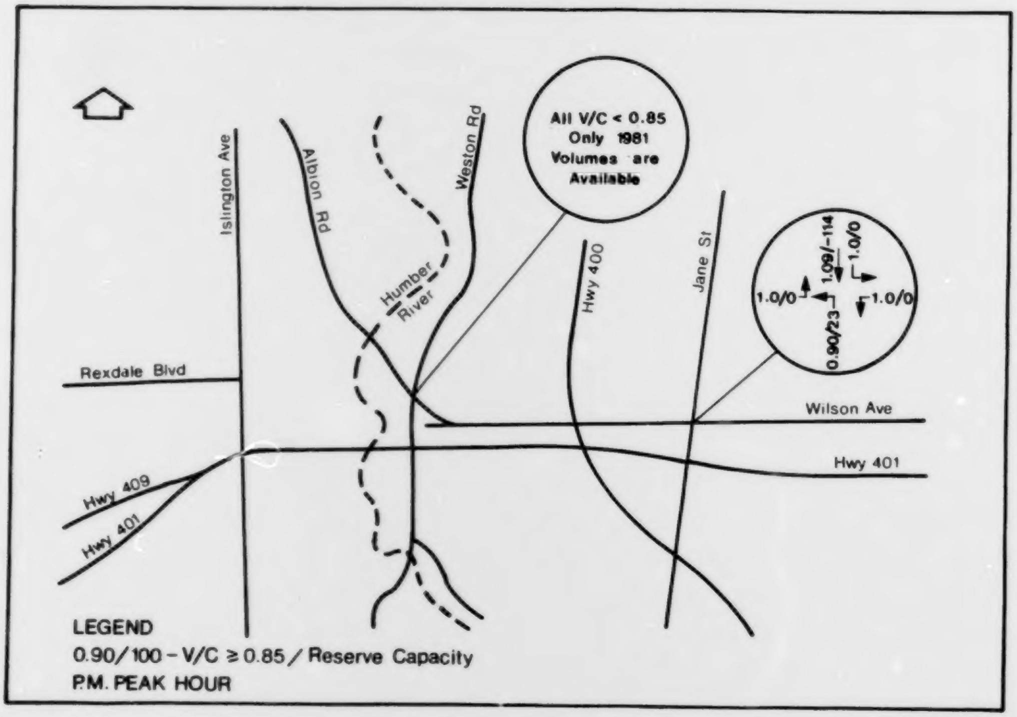
Finch Ave W
Martin Grove Rd
Kipling Ave
Islington Ave
Humber River
Weston Rd
Hwy 400
Sheppard Ave W
1.0/0
1.03/-3
1.0/0
1.0/0
1.0/0
1.03/-10
1.02/-27
0.92/103
LEGEND
0.90/100 - V/C ≥ 0.85 / Reserve Capacity
P.M. PEAK HOUR

FINCH AND SHEPPARD AVE.


All V/C < 0.85
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Volumes are
Available
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Weston Rd
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1.0/0
0.90/23
Rexdale Blvd
Wilson Ave
Hwy 401
Hwy 409
Hwy 401
LEGEND
0.90/100 - V/C ≥ 0.85 / Reserve Capacity
P.M. PEAK HOUR

WILSON

EXHIBIT 29:
CRITICAL V/C AND RESERVE CAPACITY
WILSON AVENUE

5.8.4 Other Discontinuities

Other discontinuities not examined in the preceeding sections are discussed in the following passages.

o Rathburn Road

This collector road is discontinuous across Etobicoke Creek. Travel demand forecasts show the need to provide as much road capacity at the boundary as possible, as well as a need for a complimentary pro-transit strategy. The completion of Rathburn, as well as providing much needed additional road capacity, also provides the opportunity for a continuous Rathburn transit service between Mississauga and Etobicoke which would be a positive step towards providing a more complete grid of transit services and improving transit modal split. Ccity at the boundary as possible, as well as a need for a urrently, Mississauga transit service on Rathburn accesses Metro (to Islington Station) via Burnhamthorpe Road, thus not serving so well potential Mississauga passengers who have destinations further north via a transfer to north-south routes. In addition, a lack of cross-boundary service on Rathburn Road does not serve the Etobicoke residents in that corridor who have destinations in Mississauga.

Despite the need and obvious benefits of completing Rathburn Road, Etobicoke Council have taken a position of not supporting this link and have rezoned the right-of-way immediately east of Etobicoke Creek to parkland. Metropolitan staff recognized this position in reviewing transportation needs in the West Metro Boundary Transportation Review. In response to that study however, the City of Mississauga reiterated their strong support for completion of this link. The road on the Mississauga side is constructed as a 4 lane roadway which anticipates the connection to Etobicoke. It is estimated generally, that approximately 55% of peak period Mississauga traffic is destined to Etobicoke. It can therefore, be argued that 55% of the need of a completed

Rathburn Road is attributable to an Etobicoke need and 55% of the benefits would be accrued to Etobicoke. A completed Rathburn Road would provide a very valuable additional connection from Mississauga to Highway 427, where a partial interchange (to and from the south) now exists;

- Dufferin Street (South)

  The need to eliminate the jog at Queen Street and discontinuity north of Lakeshore Boulevard has been recognized in the Central Waterfront Transportation Study. Environmental Assessment studies are soon to be initiated;

- Dufferin Street (North)

  The discontinuity at Wilson does not have a natural connection with Dufferin Street at Sheppard as Allen Road connects to Dufferin at Sheppard Avenue. With any redevelopment of the Downsview airport site, Dufferin should be extended north either to Sheppard Avenue, west of Allen Road, or simply as a major access road to serve development;

- Kipling Avenue

  Kipling Avenue is discontinuous at Steeles Avenue. Forecasts show the medium to long term need to complete Kipling Avenue. A review of alignments for a northerly extension should be undertaken in the near future with York Region and the Town of Vaughan to ensure that the necessary right-of-way is protected;

- Weston Road

  Weston Road is also discontinuous at Steeles Avenue, although the roadway in York Region does connect to Signet Drive in Metro. It has been agreed at the staff level, however, that the jog will be eliminated on the York side of Steeles and Regional Engineering staff have advised that this project is now in the design phase and could be constructed as early as 1990.

5.8.5 Summary

There follows a summary of conclusions and action needed in respect to the discontinuities discussed in this section.

Allen Road

- the terminus at Eglinton Avenue is currently one of the major bottlenecks in Metro;
- Partial solutions can potentially cause as many problems as they solve. Therefore, an environmental assessment study of a southerly extension should be undertaken, such study to include a full cost/benefit analysis.

Black Creek Drive

- certain turning movements at signalized intersections at capacity. Improvements in the area have been recommended in the St.Clair/Weston Traffic Management Study. The extension is a possible candidate to partially relieve Allen Road and future pressure on the QEW/Gardiner Expressway. Given the need to pursue the extension of Allen Road first, along with the Gardiner widening and implementation of T.S.M. measures in the Gardiner corridor, a study of the extension of Black Creek Drive should not be undertaken at this time.

Finch Avenue

- extension across the Humber is an immediate need.

Wilson Avenue

- Medium term need for extension across the Humber; sooner if O-D survey on Highway 401 shows a significant number of local trips could be diverted from Highway 401.

Sheppard Avenue

- extension across the Humber is not needed before 2011 unless either Finch Avenue extension or Wilson Avenue extension is rejected.

Rathburn Road

- need for extension across Etobicoke Creek is easily demonstrated in short term, primarily to serve Etobicoke development.

Kipling Avenue

- extension north of Steeles is a long term need; property requirements should be established in near term.

5.9 NEEDS OF THE GOODS MOVEMENT INDUSTRY

Over the last 15 years, a significant amount of industry has left Metro and the study area in particular. This section will attempt to relate current and likely future conditions on the road network to the distribution of goods in the study area and comment on the consequences regarding the viability of future industrial expansion in northwest Metro.

The Metropolitan Goods Movement Study was undertaken concurrently with this study. The Goods Movement study has collected a significant amount of data on the characteristics of the goods movement industry, including origin-destination data, operational characteristics and economic activity. This section will draw on relevant data from that study.

The needs of the goods movement industry are addressed by examining three broad areas:

- Characteristics of industry in Northwest Metro;
- O/D and other data collected in Goods Movement Study; and
- Future outlook for the goods movement industry.

5.9.1 The Industrial Northwest Metro

Table 5.18 illustrates the change in employment in the study area by major planning district between 1970 and 1985. The number of manufacturing/warehousing jobs can be seen to have halved between these two years for the most mature inner areas of Metro, including the Central Area. The outer areas represented by P.D.'s 8, 9 and 10 were relatively undeveloped in 1970 and have maintained (P.D.10 has increased) their number of manufacturing/warehousing jobs, although the major growth in jobs has been in retail and office in particular. These changes reflect two distinct trends:

TABLE 5.18

TOTAL EMPLOYMENT

BY TYPE AND MAJOR PLANNING DISTRICT

	Manufacturing/ Warehousing		Office		Retail	
	1970	1985	1970	1985	1970	1985
P.D.1	67,736	31,283	138,996	220,797	35,417	31,183
P.D.2	24,510	11,295	4,706	11,118	4,776	9,345
P.D.3	61,099	32,988	7,285	20,155	11,193	12,751
P.D.8	20,885	15,047	10,279	25,015	5,909	11,051
P.D.9	28,747	27,957	1,926	15,439	1,405	6,433
P.D.10	33,823	41,152	5,565	26,134	5,200	10,483

NOTE: 1970 figures were collected in a slightly different manner than in 1985. Therefore, while general trends are well illustrated, individual statistics are not reliable. In particular, P.D.1 retail job totals are not compatible.

(i) The changing economy from manufacturing to service industry; and

(ii) the relocation of manufacturing/warehousing business to the outlying regions.

With respect to the first factor, there has not been a decline in manufacturing jobs in the G.T.A. as a whole. It is simply that the main growth has been, and will continue to be, in the service sector. This is not to say the volume of truck movements will not increase as trip generation rates for the retail/wholesale sectors and food/beverage sectors are higher than those for industry.

Much of the industrial and warehousing development in the study area was developed close to the airport, the port and particularly the CN and CP railway lines, as can be seen in Exhibit 30. This reflects the major role the railways had in the past in shaping the urban form of Metropolitan Toronto. All the areas shown in the exhibit have rail sidings which allow the transfer of goods to and from the rail system. The main growth in the industrial and warehousing sectors in recent years has not been similarly centered around the rail network. Instead, the recent growth has been centered around the expressway network, particularly Highways 401 and 410 in Peel. The indications are that in York Region, this type of development will grow rapidly along Highway 400 and the future Highway 407. Recent growth in Metro in the northwest has also been in the Highways 427, 401 and 400 area showing an increased tendency to locate near expressways rather than rail.

There are many factors which influence a firm's decision to locate. These can include:

- zoning - simply that commercial zoning close to an expressway is more common, as residential development close to an expressway is not that attractive to residents;
- relocation of a business due to lack of space for expansion. Most of these growing industrial areas in the outlying regions are 'green-field' sites allowing greater development flexibility;

- lower land costs (and in certain cases taxes) outside Metro;
- good access to the expressway system and hence the market place which is growing both geographically as well as in volume; and
- proximity to similar businesses.

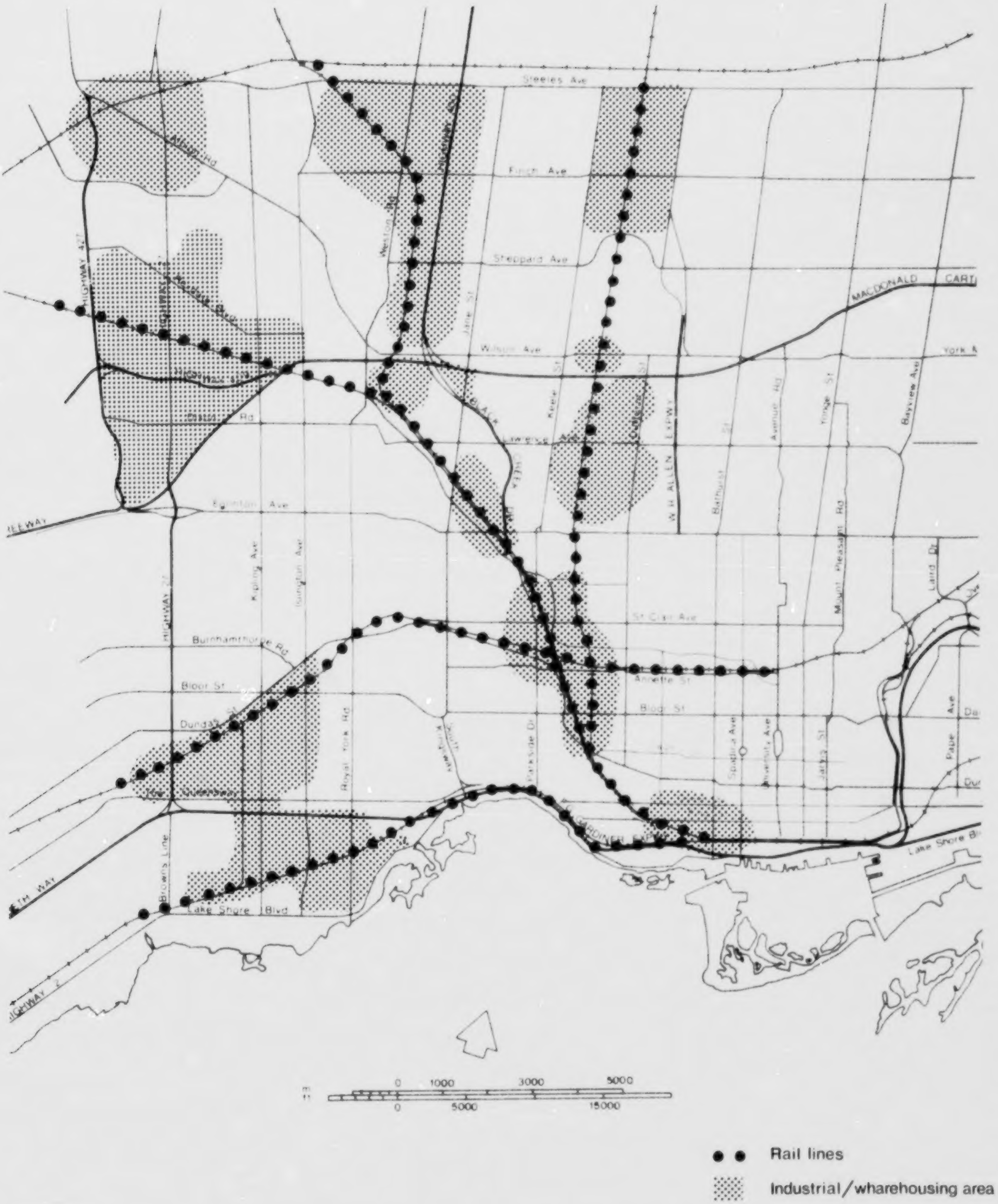
However, even though there could well be numerous reasons for the location/relocation of firms in the G.T.A., it remains a fact that an increasing number of firms are choosing to locate close to the expressway system. This looks likely to continue with construction of Highway 407 and also as lands near existing expressways remain open for development. In summary, where the railways once shaped industrial Metropolitan Toronto, the expressways are now shaping the industrial map of the G.T.A.

5.9.2. Metro Goods Movement Study Data

In the latter half of 1986 and the first half of 1987, the Metropolitan Toronto Goods Movement Study gathered the following types of information:

- data on the movement of urban goods vehicles;
- data on the industries that generate urban goods movement;
- data on the views of:
  - industry;
  - shippers and carriers;
  - regulators and policy makers;
  - safety and law enforcement officials;
- other aspects of urban goods movements, including:
  - its economic impacts;
  - its safety in respect of dangerous goods;
  - its operation with respect to exceptional loads and pick-up and delivery;
  - its problems with respect to vehicle routes and restrictions.

Certain of the data (those that are relevant to the issues under consideration) are presented in this section.


Steeles Ave
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MACDONALD CARTI
Wilson Ave
York M
Lawrence Ave
Eglinton Ave
St Clair Ave
Annette St
Bloor St
Dundas St
Burnhamthorpe Rd
Lake Shore Blvd
GARDINER EXPY
HIGHWAY 427
HIGHWAY 27
HIGHWAY 2
Weston Rd
Jane St
Keele St
W R ALLEN EXPWY
Bathurst St
Avenue Rd
Yonge St
Bayview Ave
Mount Pleasant Rd
Laird Dr
Kipling Ave
Islington Ave
Royal York Rd
Parkside Dr
Spadina Ave
University Ave
Jarvis St
Pape Ave
Browns Line
BLACK CREEK DR
0 1000 3000 5000
0 5000 15000
Rail lines
Industrial/wharehousing area

EXHIBIT 30: INDUSTRIAL AREAS OF WEST METRO

Origin-Destination Data

The Metro Goods Movement Study collected O-D data for trucks operating in and through Metro Toronto by way of a mail-out survey. Trip matrices were produced on a coarse zone basis (roughly equivalent to the major planning district level).

The truck movements generated daily are illustrated in Exhibit 31. This shows a major portion of the trips being generated in the CBD (City of Toronto in general) and secondly in the eastern Mississauga and Etobicoke (north and south) areas. Exhibit 32 illustrates the daily work trips attracted to each zone throughout the study area. This shows a similar pattern of activity to that observed for generated trips. A summary of truck trip production and attraction rates for different areas of the G.T.A. is given in Tables 5.19 and 5.20.

In order to understand the travel patterns of trucks orginating from the main generators of truck movements in the northwest Metro area, a series of desire line diagrams were produced. Exhibit 33 shows the main destination areas for truck movements originating from north Etobicoke. Intra-zonal trips are by far the largest element (32% of the total); the majority of the remainder are local trips which are likely to rely on Highway 427 in particular and Highway 401 secondly. The localized truck trip making of north Etobicoke is similar to that of north Etobicoke residents home-to-work trips.

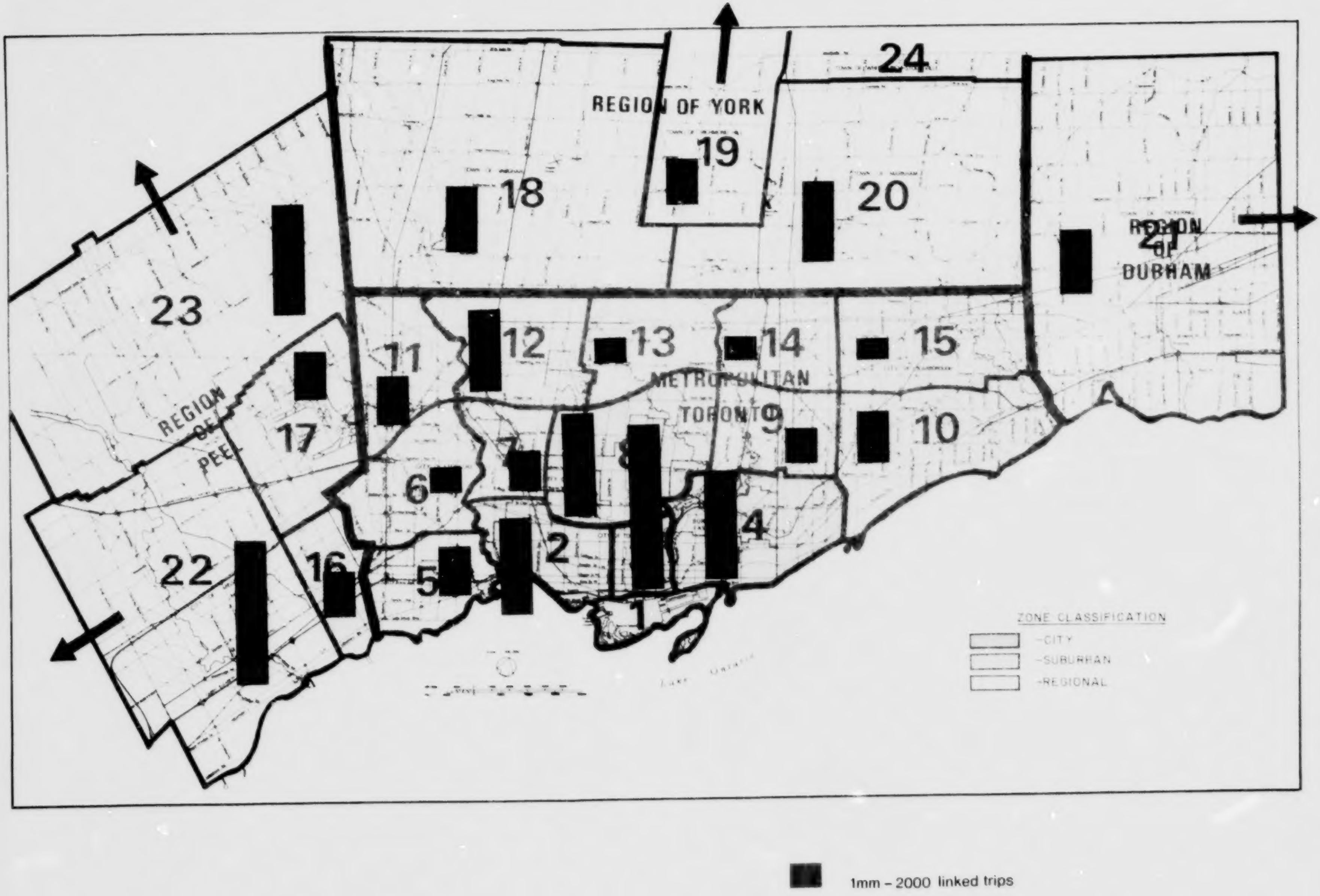
Exhibit 34 illustrates the destinations of truck trips generated from the airport and vicinity. This shows trip making patterns which appear to be long distance and are attracted to the central portion of Metro. Much of this traffic can be seen to rely on the Highway 427/QEW/Gardiner (and in some cases the Don Valley Parkway) route while others would use Highway 401. This array of destinations shows a heavy reliance on the expressway system and is perhaps proof that trip making patterns and the existing transportation infrastructure are

TABLE 5.19

TRUCK TRIP PRODUCTIONS FOR THE G.T.A.

Super Zone	Trips	Area (sq.m)	Trips/ (sq.km)	Firms	Trips Firm
CBD	67,450	38.40	1,757	4,686	14
Urban Metro	146,580	190.00	771	9,975	15
Suburban Metro	126,860	403.50	314	8,980	14
Peel Region	136,845	1,257.21	109	10,062	14
York Region (1)	82,360	858.59	96	5,987	14
Durham Region (1)	109,185	1,126.71	97	7,887	14
Total	669,280	3,874.41	173	47,577	14

(1) Data refers to only the part of the region included in the study area (See Exhibit 31)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METROPOLITAN TORONTO
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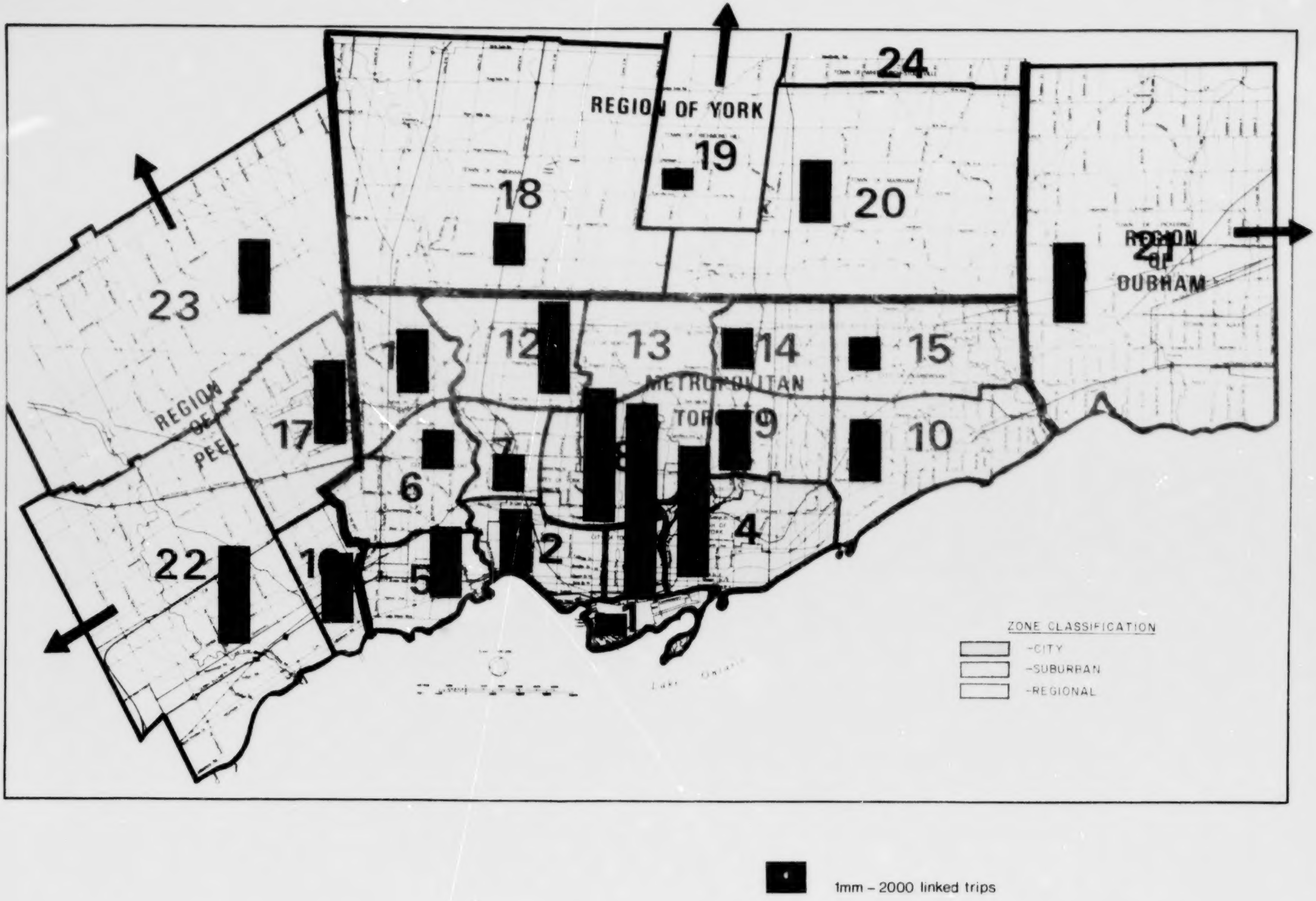
2
1
ZONE CLASSIFICATION
-CITY
-SUBURBAN
-REGIONAL
Lake Ontario
1mm - 2000 linked trips

NOTE: Zone system is that used for the Metro Goods Movement Study
SOURCE: Metropolitan Toronto Goods Movement Study

EXHIBIT 31: TRUCK TRIPS GENERATED DAILY (1986)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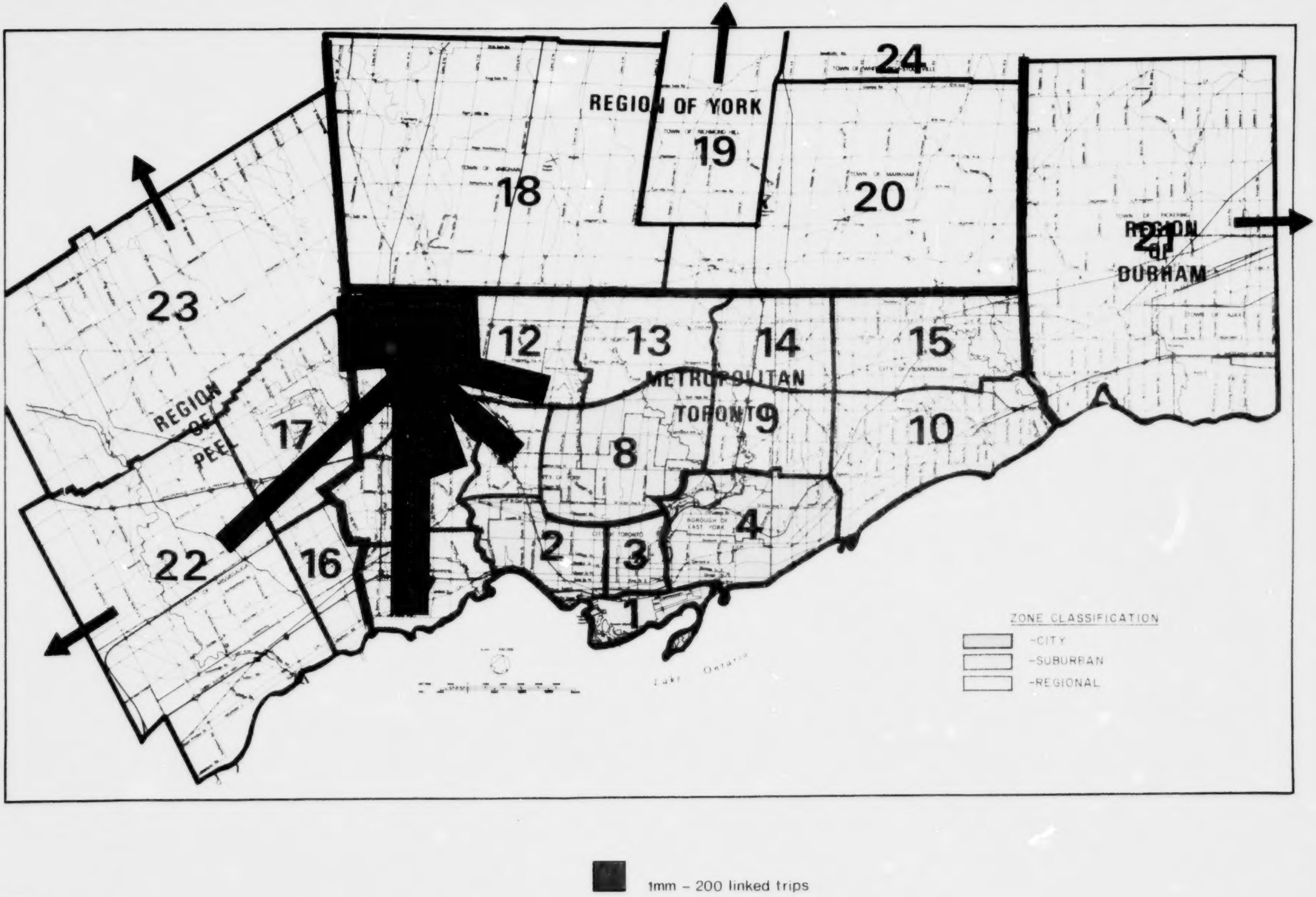
ZONE CLASSIFICATION
-CITY
-SUBURBAN
-REGIONAL
Lake Ontario
1mm – 2000 linked trips

NOTE: Zone system is that used for the Metro Goods Movement Study
SOURCE: Metropolitan Toronto Goods Movement Study

EXHIBIT 32: TRUCK TRIPS ATTRACTED DAILY (1986)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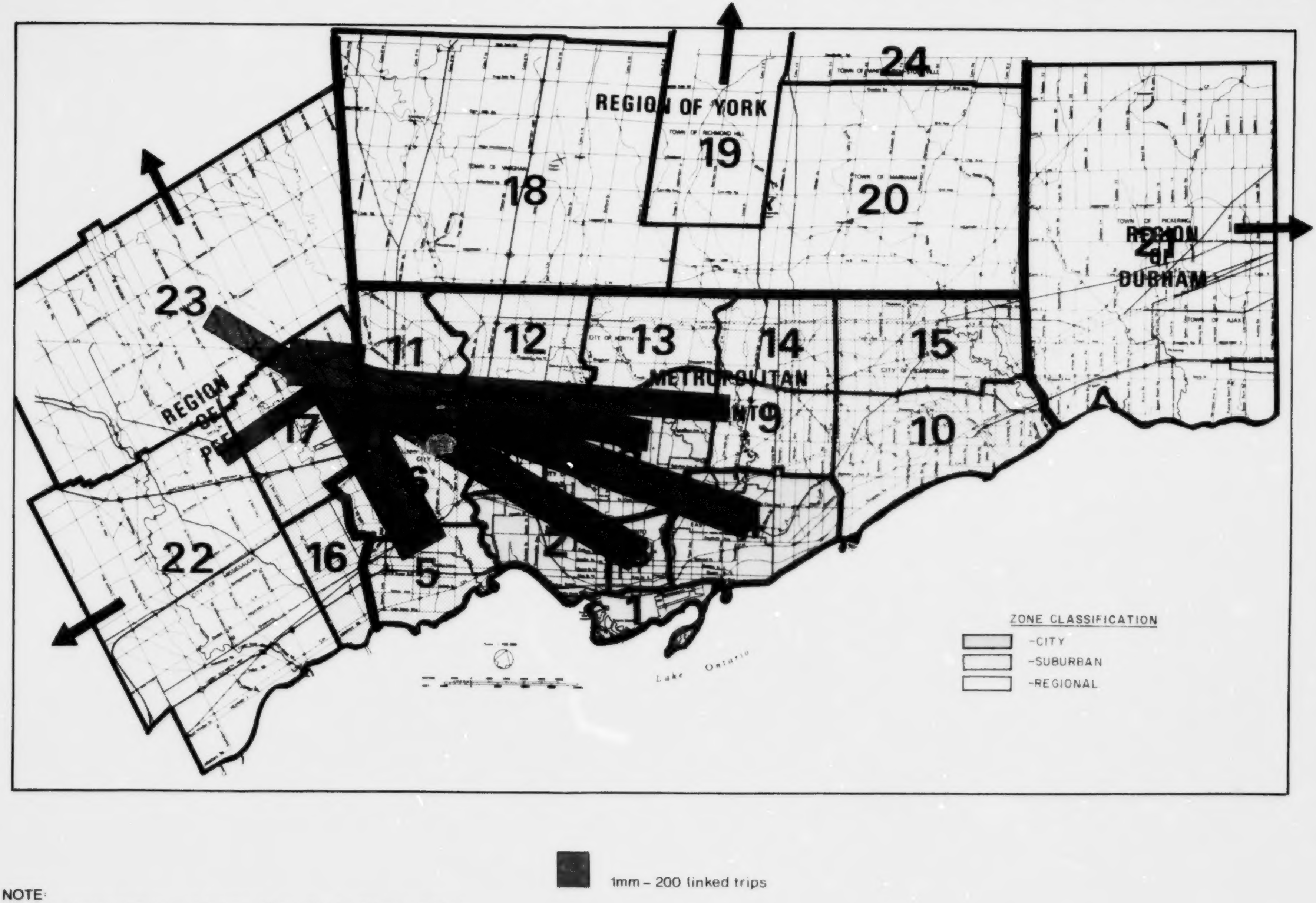
Lake Ontario
ZONE CLASSIFICATION
-CITY
-SUBURBAN
-REGIONAL
1mm - 200 linked trips

NOTE:
1. Zone system is that used for the Metro Goods Movement
2. All interchanges greater than 700 trips per day
3 Intrazonals for zone 1 are 32% of the total origins
SOURCE: Metro Goods Movement Study, 1986

EXHIBIT 33 TRUCK MOVEMENTS GENERATED FROM NORTH ETOBICOKE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Lake Ontario
ZONE CLASSIFICATION
-CITY
-SUBURBAN
-REGIONAL
1mm - 200 linked trips

NOTE:
1. Zone system is that used for the Metro Goods Movement Study
2. All interchanges greater than 700 trips per day
3. Intrazonals for zone 17 are 15% of the total origins
SOURCE: Metro Goods Movement Study, 1986

EXHIBIT 34:
TRUCK MOVEMENTS GENERATED FROM THE AIRPORT AND VICINITY (Z17)

TABLE 5.20

TRUCK TRIP ATTRACTIONS FOR THE G.T.A.

Super Zone	Trips	Area (sq.km)	Trips/ (sq.km)
CBD	80,183	38.40	2,088
Urban Metro	164,094	190.00	863
Suburban Metro	164,813	403.50	408
Peel Region	117,224	1,257.21	93
York Region (1)	56,966	585.59	66
Durham Region (1)	86,000	1,126.71	76
TOTAL	669,280	3,874.41	173

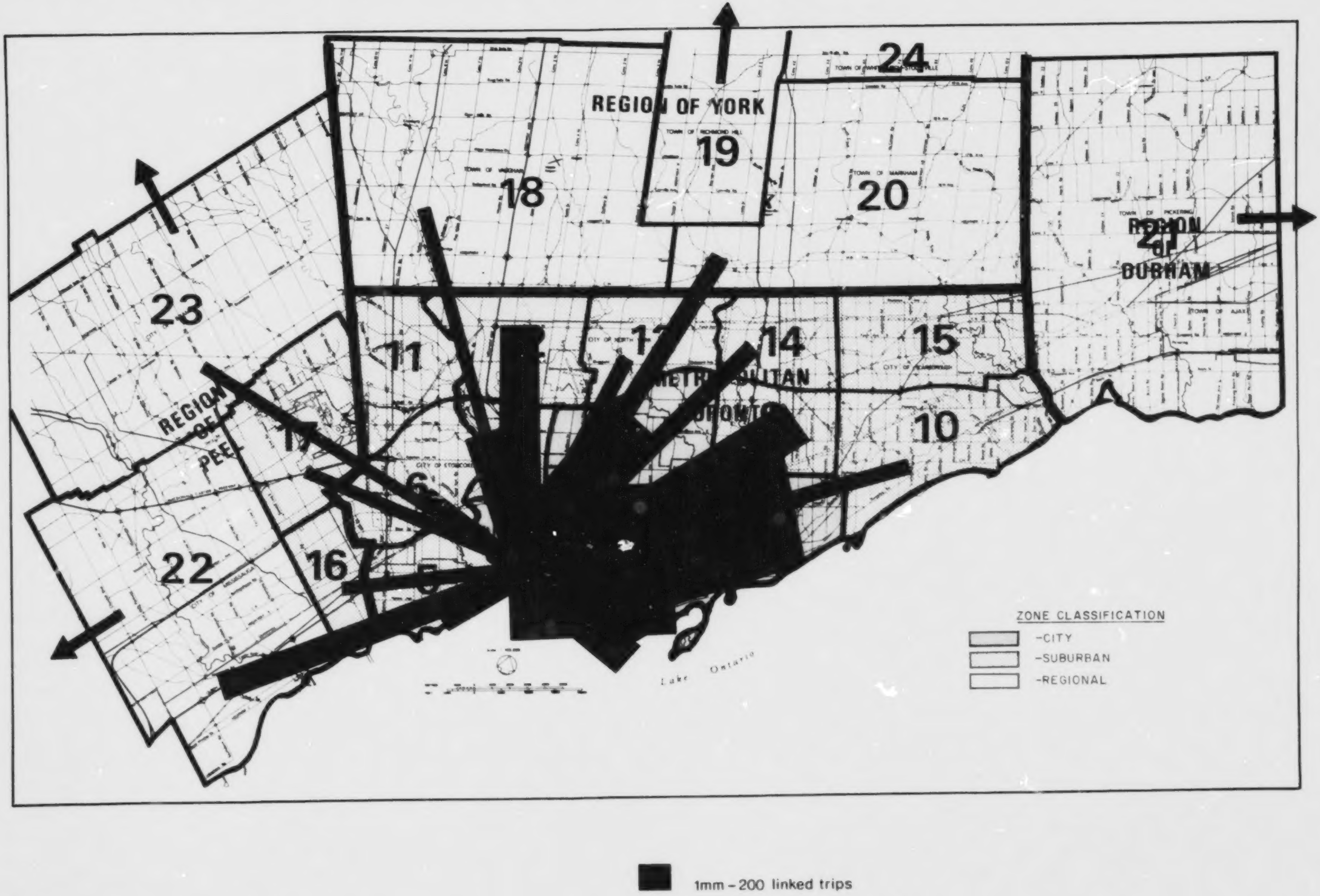
(1) Data refers to only the part of the region included in the study area (See Exhibit 31)

indeed dependent variables and do not exist separately from one another. It also confirms the reliance on the expressway system to serve the market place. Overall, the high degree of localized trip making illustrates a desire for the goods movement industry to locate close to its market. The longer distance trips show a high degree of localized trip making illustrates a desire for the goods movement industry to locate close to its market. The longer distance trips show a high degree of orientation to dependency on the expressway system. Although it has to be noted that these linked trips are not simply single independent trips and that firms serve many customers from one route. This means that while the majority of trips may be on an expressway, the arterial road system then serves many intermediate stops and so the importance of the arterial road system is not to be forgotten.

Further linked trip plots are shown for west Toronto and the Central Business District in Exhibits 35 and 36. Note the larger scale used for the C.B.D. plot. This was necessary as the linkages to and from the C.B.D. are much greater than any other area in the G.T. A. The linkages in the three diagrams show a large proportion of short distance trips with a necessary reliance on the arterial road system, and a number of linkages which rely on the expressway system. There is a high number of north-south trips oriented around the Yonge Street corridor which, unlike many other high volume corridors, are not served by an expressway.

Additional Data

The Goods Movement Study surveyed 100 firms located in the G.T.A. One of the questions asked was - how easy was their current location to operate from. The following table gives the results of this question stratified by three basic areas: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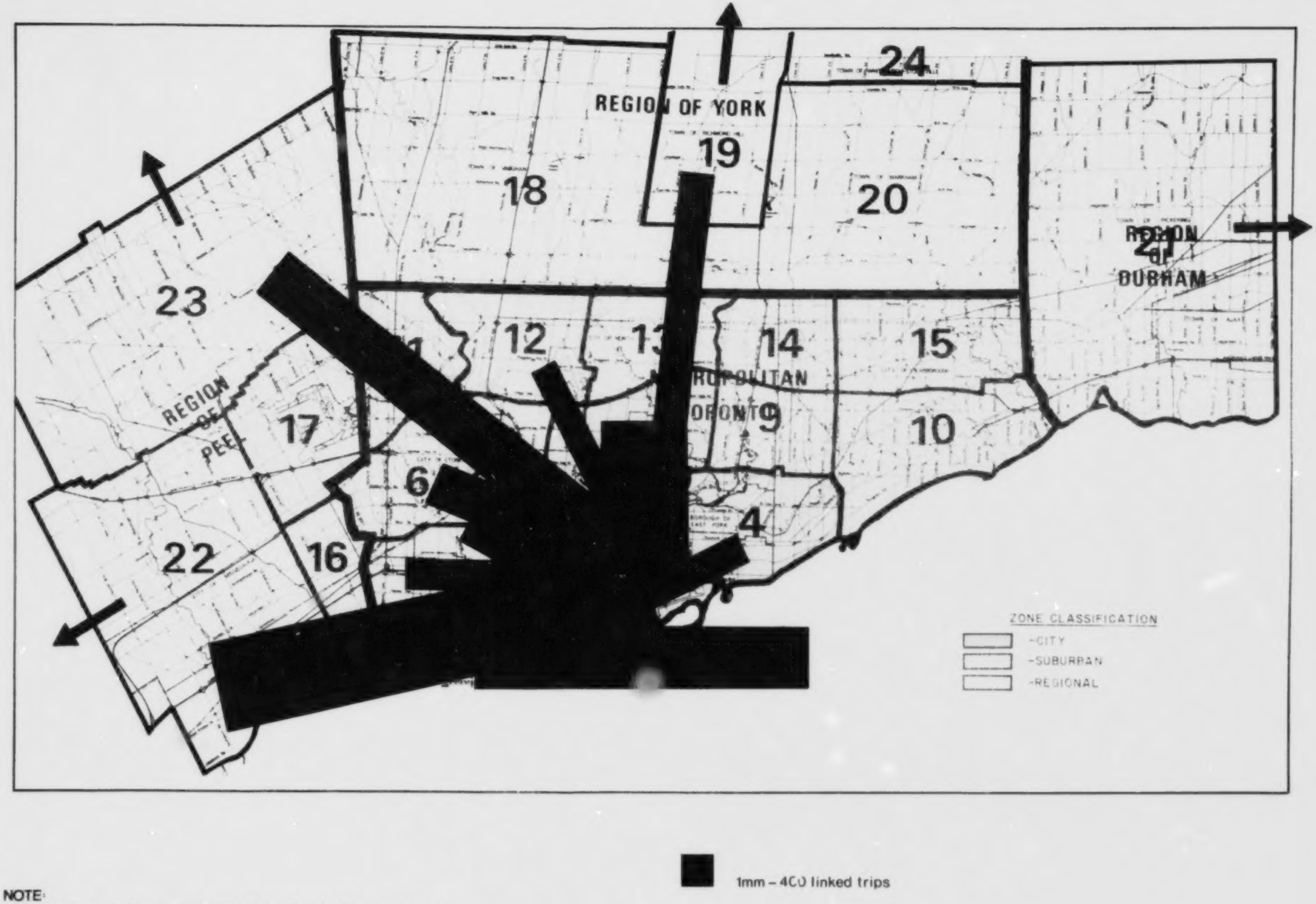
Lake Ontario
ZONE CLASSIFICATION
-CITY
-SUBURBAN
-REGIONAL
1mm - 200 linked trips

NOTE:
1. Zone system is that used for the Metro Goods Movement Study
2. All interchanges greater than 700 trips
3. Intrazonals for zone 2 are 20% of the total origins
SOURCE: Metro Goods Movement Study, 1986

EXHIBIT 35:
TRUCK MOVEMENTS GENERATED FROM ZONE 2 (WEST TORONTO)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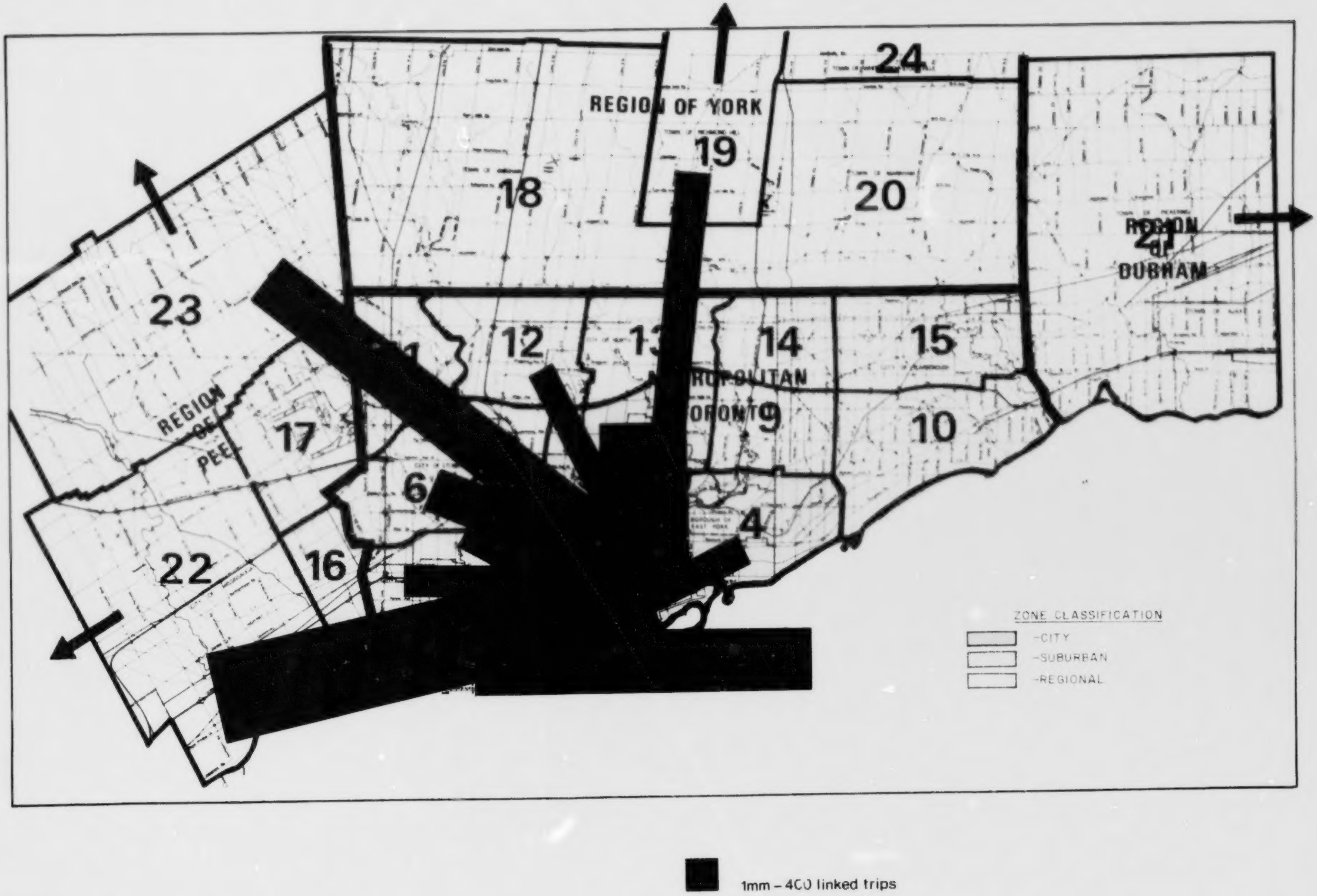
ZONE CLASSIFICATION
-CITY
-SUBURBAN
-REGIONAL
1mm – 400 linked trips

NOTE:
1. Zone system is that used for the Metro Goods Movement Study
2. All interchanges greater than 1700 trips
3. Intrazonals for zones 1 and 3 are 33% of the total destinations
SOURCE: Metro Goods Movement Study, 1986

EXHIBIT 36:
TRUCK MOVEMENTS ATTRACTED TO THE CBD (Z's 1 AND 3)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REGION OF PEEL
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ZONE CLASSIFICATION
-CITY
-SUBURBAN
-REGIONAL
1mm - 400 linked trips

NOTE:
1. Zone system is that used for the Metro Goods Movement Study
2. All interchanges greater than 1700 trips
3. Intrazonals for zones 1 and 3 are 33% of the total destinations
SOURCE: Metro Goods Movement Study, 1986

EXHIBIT 36:
TRUCK MOVEMENTS ATTRACTED TO THE CBD (Z's 1 AND 3)

How Easy is Your Location to Operate From ?

	Urban Core	Suburban	Regional	Total
Good	8	68	12	88
Average	5	3	1	8
Bad	1	3	0	4
No Answer	1	1	0	2
Total	15	74	13	102

The sample is not sufficient to be able to draw conclusions with any great confidence. However, there is a definite difference exhibited by firms in the three sub-areas in that, while the majority of firms felt that their current location was good, the firms in the urban core indicated a degree of dissatisfaction with 42% of urban core firms finding their location less than good compared with 8% in the suburban and regional areas.

The same firms were also asked whether they were planning to relocate. The results from this question are shown in Exhibit 37 together with their reasons for wishing to relocate. Of the 15 Urban Core firms surveyed, 6 (40%) were planning to relocate, 4 of these for transportation reasons. For the Suburban area firms, 15 (20%) of the 74 firms were planning to relocate, 4 of these because of transportation concerns. Only 1 of the 13 Regional firms was planning to relocate and that was not because of a transportation concern. The results of the question "Are you planning to expand" are shown below:

Are you Planning to Expand ?

	Urban Core	Suburban	Regional	Total
Yes	3 (20%)	19 (26%)	7 (54%)	29 (28%)
No	7 (47%)	40 (54%)	4 (31%)	51 (50%)
No Answers or don't know	5 (33%)	15 (20%	2 (15%)	22 (22%)
Total	15 (100%)	74 (100%)	13 (100%)	102 (100%)

This shows the expected result that the more urban the location the less tendency (or possibly ability) to expand.

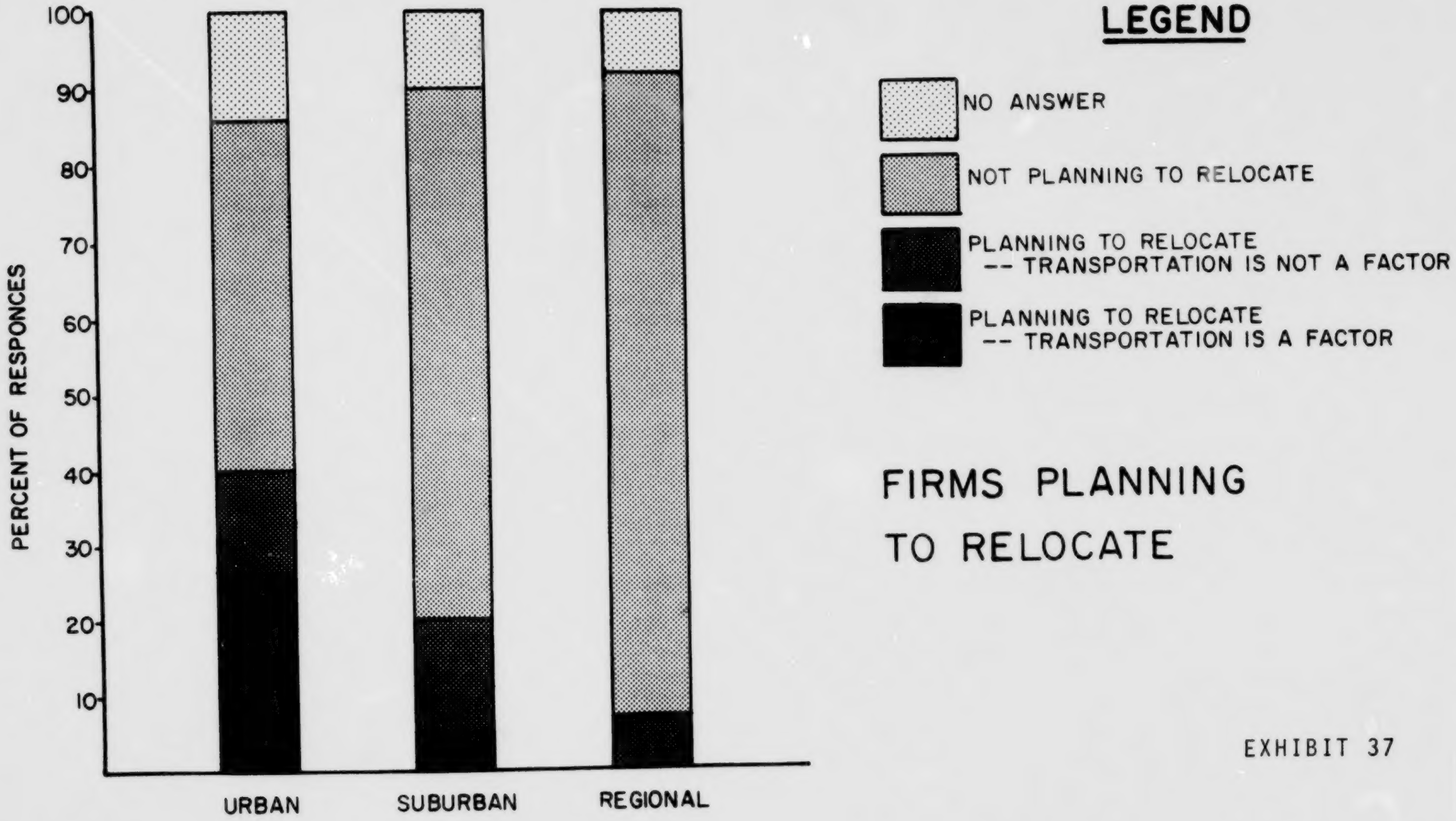
5.9.3. Future Outlook for the Goods Movement Industry

Changes in Vehicle Size

The physical dimensions and characteristics of vehicles are established by government legislation principally in response to industry requirement. Maximum limits for the length, width, height and weight of a vehicle are defined under the Highway Traffic Act. Although the height and width limitations have been relatively unchanged in recent years and are unlikely to change in the future due to the physical restrictions imposed by existing urban infrastructure, the permitted length and weight has been the subject of continual review and research. R.T.A.C. has recently completed a study which is recommending an increase in allowable combination truck length from the current 23 metres to 25 metres. It is not clear whether this recommendation will eventually be adopted. However, the Council of Ministers has rejected this recommendation and has adopted a 23m maximum for inter-provincial trucks.

Exhibit 38 shows the changes in gross vehicle weight and legal single axle loads in Ontario between 1908 and 1970. As can be seen, the trend has been to the registration of increasingly heavier vehicles accompanied by a corresponding but somewhat lesser increase in single axle weight limits.

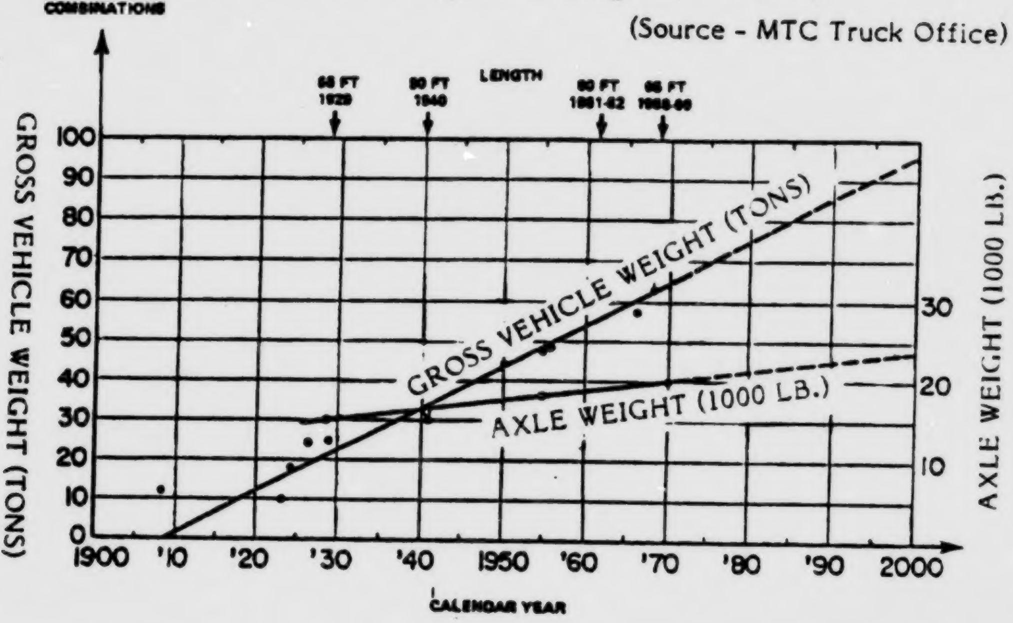
These trends have implications for the G.T.A. as a whole, but most particularly for the older, inner areas of Metro where the arterial and local roads tend to have narrow pavement widths and small turning radii. This aspect of local access difficulty has been brought to the attention of the City of Toronto staff by some inner area firms and is to be the subject of a specific local study.



FIRMS PLANNING TO RELOCATE

EXHIBIT 37

Change in Gross Vehicle and Legal Axle Weights (1908-1970)



(Source - MTC Truck Office)

EXHIBIT 38

The Metro Goods Movement Study pointed to the tendency for firms to increase its truck size when researching operating costs. The results show that costs increase from $28 per hour for 2 axle, 4-tire vehicles to $36 per hour for a 3-axle vehicles. The marginal increase in cost of the largest vehicle is only 28% over the smallest vehicle, and 16% over the intermediate vehicle. In consequence the marginal cost increase of the larger vehicle does not reflect its increased carrying capacity over the smaller ones. This in itself has industrial implications in that it encourages the purchase of larger vehicles, and for example, is causing the food and beverage sector to increase vehicle size even for urban pick-up and delivery.

Cost/Hour (Vehicle Plus Driver)

Vehicle Type	**Average Cost (per hour)**
2 axles/4 tires	$ 28.14
2 axles/more than 4 tires	$ 31.12
3 or more axles	$ 36.00

Pick-Up and Delivery

The attractiveness of a particular area to serve and to operate from is determined by the quality of pick-up and delivery (P.U.D.) facilities as well as the road system. Again the better off-street facilities tend to be the newer facilities where the number and size of trucks have been more easily foreseen. Many firms operating in the older urban areas have to rely on on-street facilities which have disbenefits to the industry and other road users alike. Often, where off-street facilities are provided they are inadequate for the present day vehicles and end up being unusable for many trucks. Additionally in some older buildings where internal docking facilities exist, due to a lack of space, a good vehicle frequently can not reverse into the dock without blocking traffic.

The size and configuration of off-street P.U.D. facilities have changed over time to reflect the municipal requirements and By-laws of the day and the requirements of industry for larger trucks. Current regulations vary across Metropolitan Toronto depending upon the Area Municipal jurisdiction involved. The number of docking spaces relate to the floor area and use of the building, and the clearance and minimum space requirements are described in the By-law. Where the building designer has provided for a more generous allowance than the minimum requirements described by By-law, the loading and unloading process will be the more effective. The cost impact to the developer of the project in doing this however, is very significant, particularly in the CBD. A recent example is the proposed B.C.E. development on the northside of Front Street between Yonge and Bay Streets, which has additional space for the use of couriers over and above that required by the By-laws.

Future Road Conditions

The Good Movement Study found that nearly 20% of firms are operating throughout the entire day and that at 8:00 a.m., 60% of firms are operating and by 9.00 a.m. virtually every firm. The commercial vehicle fleet can be seen to be operating through most of the morning peak period. The same situation is not true for the evening peak. While 80% of the survey firms were still operating at 5:00 p.m., by 6:00 p.m. only 40% of firms were still operating. This means that only the start of the evening peak period impacts significantly on truck operations.

The modelling exercise for this study has focussed on the morning peak hour and the conclusions derived from this analysis are quite clear due to the activity of firms operating in the morning peak.

One of the overall implications of future travel demand is the continuation of the established trend for commuters travelling longer distances to their work place, the likelihood that a part of that trip will be made on an expressway. For example, traffic growth forecasts for the Gardiner Expressway and Highway 401 were shown to be extremely high (mostly due to the increase in commuters from Peel Region), indicating increased congestion with longer line-ups on the two facilities.

The importance of these two expressways in particular, to the movement of goods has already been shown by the O-D trip linkages. Apart from strong growth along expressway corridors, the forecast showed the main auto traffic growth to be inter-regional and focussed mainly in the outer areas of Metro, which of course will impact on much of the localized truck movements on the arterial road network.

No attempt has been made to forecast future truck movements, but it is clear that with the Central Area currently being the major generator and attractor of truck trips, as well as facilitating through trips by way of the Gardiner, the future employment growth (a third of all Metro growth) and population growth will result in a significant growth in truck movements. As the hourly vehicle volume profile near to the Central Area has been flattening out over the years because of an increase in part-time work, business, shopping and leisure trips in the off-peak, this increase in off-peak traffic will impact on the distribution of goods in the Central Area in the future. Many other city centres tend to have an expressway system close to the centre to quickly take traffic off the arterial roads and away from the city centre. With the Toronto Central Area, only the Gardiner facilitates this role, the remaining truck traffic destined for points northwest to northeast have to rely, and therefore impact on, the arterial road system which is currently close to or at capacity in the peak periods and tending towards capacity in the off-peak.

5.9.4 Summary

The essential needs of the Goods Movement industry are to minimize cost and improve access to existing and potential markets. The role of the road network is therefore to provide a good level of service. Trucks stuck in traffic jams inflict time and hence monetary cost on a firm. The ubiquitous nature of truck movements make a continuous road grid highly desirable and a stringent municipal development control process to maintain level of service essential.

The importance of the expressway system to the movement of Goods is quite clearly shown by the linked O-D data which shows a high degree of dependency on Highway 401, 427 and the QEW/Gardiner Expressway corridor. A similar high degree of localized truck movements illustrates the importance of a continuous arterial grid system which is not the case across the Humber River and in other parts of the study area such as Keele Street, Allen Road, Black Creek Drive, etc.

In respect of the viability of industrial development there are different implications for different parts of the study area. The outer areas look well placed to continue to attract industrial development for some time to come. Highway 407 will be beneficial in this respect. The main threat to the economic viability of this area is the worsening condition of Highway 401 and the increasing numbers of (currently auto dependent) inter-regional commuters. Recommendations are made later which address these two issues.

The inner northwest Metro area is a different matter. Firms in the western half of the City of York have benefited from the recent construction of Black Creek Drive and the resulting improved access to the expressway system. Apart from more localized problems on the arterial road system, (again, for which specific recommendations are made) the areas around Black Creek Drive are reasonably well placed to attract development. The City of York have policies in place to pursue further industrial development and redevelopment. By addressing the problems associated with localized access difficulties and site flexibility, the area could be further improved to help the City of York achieve its goals.

Based on the limited data available from the Goods Movement Study, it would appear that the western half of the City of Toronto is not so well positioned to attract industrial development as the key transportation factors identified (expressway access, localized access, P.U.D. facilities, site flexibility) are not present in this area, with the implication being that this area could continue to lose industry to areas better served by roads unless remedial action is taken. The City appears to have a choice of either addressing access problems for industrial areas in an attempt to keep industry, or alternatively, redeveloping certain of these areas for residential use, for example, which would also tend to reduce the future impact of inter-regional travel demand on expressway capacity into the Central Area.

5.10 DEVELOPMENT ISSUES

In this section development issues are discussed by four sub-areas; Central Area, Inner Urban Area (P.D.2 and 3), Etobicoke, and North York; while commencing with a general overview of the study area.

5.10.1 Study Area Overview

The essential conclusion with respect to travel demand forecasts for the study area is that the need for extra capacity in the transportation system in northwest Metro in the future is due almost entirely to cater to inter-regional commuting. This is a result of a declining population and labour force (in particular) throughout the majority of the study area. In the inner urban area this could well result in a drop in peak period traffic on some local roads as well as peak period transit ridership on many TTC services, and possibly the subways also. TTC ridership is more likely to increase in the outer urban areas following the implementations of fare integration and service coordination. Additionally, the inter-regional trips are also likely to have a lower transit usage than trips originating in Metro due to lower residential densities outside Metro. In short, the changing commuter patterns are likely to result in a changing emphasis on needs with a particular impact on the expressway system in Metro, while certain existing infrastructure might be underutilized. These factors are elaborated upon in the following discussion.

The ratio of employed labour force (E.L.F.) to employment for Metro was 1.14 in 1981, and is forecast to steadily decrease to 0.83 by 2011 according to the M1-86 forecasts. This illustrates the expected change in the labour force/jobs balance of Metro. The Metropolitan Official Plan is fundamentally a planning strategy that has a major transit focus; from the transit oriented Central Area to the sub-centres. This plan has been working well and, although not explicitly stated, depends on a more stable relationship between urban labour force and employment totals, as it is the denser populated residential areas that contribute to the higher transit modal share as compared to the more auto dependent suburban population. It follows that the Official Plan is threatened somewhat by this changing relationship or, more to the point, future development is threatened if attention is not given to this trend.

The average home-to-work trip length for the C.M.A. increased between 1971 to 1981 from 9.7 km to 12.0 km. The growing imbalance of labour force to jobs will act to accentuate the rate of increase in average trip length. As longer trips tend to be more oriented towards expressways, this has implications such that the levels of service on expressways in Metro will decline. In particular, an earlier review of forecasts for the study area has shown demand on the Gardiner Expressway and Highway 401 (regardless of Highway 407) to increase greatly, although both facilities are currently at capacity at key locations. This of course has cost implications for the movement of goods throughout Metro with its heavy reliance on the expressway system, as well as the implication regarding the desirability for industry to locate in Metro.

The implications for this changing labour force/jobs relationship in Metro is also pointed out in the following sections with respect to specific areas.

5.10.2 Central Area (C.A.)

Development of high density office space in the C.A. appears to have a momentum of its own, driven no doubt by its ongoing position as the capital of the financial centre for the G.T.A., Ontario, and to a large degree, Canada as a whole. Therefore, using transportation as a tool to encourage development goals is a non-issue for the C.A. This is not to say that particular initiatives such as a new subway or expressway would not accelerate development; it is quite possible they could.

The real issue for the C.A. is one of timing transportation improvements to match demand. This is not an easy task at all as so many factors which effect the demand are prone to change (e.g. car occupancy, floor space per worker, part-time/full-time employment mix, occupancy rates, etc). For example, between 1970 and 1986, total a.m. peak period person trips crossing the Central Area cordon increased by 82,600 from 181,700 to 258,200. Although auto vehicle trips have increased from 54,800 to 68,400, auto person trips have stayed relatively stable in the 80,000 - 85,000 range, due to declining auto occupancy. The growth in person trips has been 14% to auto, 22% to GO Rail and 64% to T.T.C. (i.e. 86% of the growth has been on transit). If this transit trend continues, greater amounts of development can be accommodated without significant road improvements beyond those now being considered, while conversely, the continuing decline in auto occupancy threatens to accelerate the need for road improvements. If the trend to part-time employment continues, this could increase off-peak demand while not affecting peak period demand so much. From a 1979 travel survey, part-time jobs in the C.A. generate half as many peak period trips as full-time jobs. The 1970's trend of greater floor space per worker has stabilized, and presumably also, the relationship (tenuous as it is) between floor space and peak period transportation demand. These are just a few examples which illustrate the difficulty of relating transportation demand to trends in the dependent variables.

The most significant trend in recent years has been the steady decline in the a.m. peak period transit ridership crossing the West Central Area cordon from 51,302 (60%) in 1975 to 44,175 (49%) in 1985, while GO Rail ridership has increased from 5,702 (7%) to 14,106 (16%) during that time. This is a clear indication of the trend which is forecast to continue over a longer period (i.e. the next 25 years) of increased dependency on the non-Metro residents for C.A. labour force. The associated increasing average trip length has the following implications for C.A. transportation needs:

- declining TTC ridership (subway* and surface transit) into the C.A. with continuing increases in GO Rail ridership; and
- potential relief of auto travel on some arterial roads serving the C.A. with a corresponding increase in demand for expressway capacity to serve the longer distance trips.

The increase in longer distance trips tends to have a much greater impact on expressways than arterial roads although that is not to say that some route switching from expressway to arterial road will not happen. Although it is interesting to note that currently, while the Gardiner Expressway is extremely overloaded, the arterial road system may have some residual capacity. As an interesting aside one of the effects of job growth in the rest of Metro (and the G.T.A.) is to draw Metro residents to work in these centres who otherwise might work in the C.A. Now that the Metro population has stabilized, this then leads to an increasing dependency on non-Metro residents for the C.A. labour force and hence increased demand for inter-regional transportation facilities including expressways.

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* depends on amount of inter-regional commuters attracted to the subway system. However, as residential development in the regions is taking place further away from Metro, the attraction of the subway system reduces with the need for longer distance bus trips to access the subway; as well as commuter rail being much faster than subway for longer distance trips because of less frequent stops and the ability to implement express services.

In relation to the study area, the question of providing strategic transportation improvements to the C.A. in the future (apart from improvements to the local distribution system within the C.A.) lies on the expansion of GO Rail service and widening of the Gardiner Expressway. Given the pro-transit policies of both the City and Metropolitan Official Plans, GO Rail improvements would take first priority over further major road improvements in order to maximize transit ridership which may not be currently achieved because of limited service on most existing GO services. Given that the major road improvements to the C.A. with respect to northwest Metro (Gardiner widening/Front Street extension) are unlikely to be complete until 1994, the question of further road improvements specifically to serve Central Area development cannot clearly be determined until that time as current trends are contradictory (e.g. transit modal split is increasing, car occupancy is decreasing). It could be that other improvements to the expressway system, such as T.S.M. measures or extra capacity, will be needed almost immediately after the Gardiner widening, depending somewhat on whether the GO system has been expanded and whether this has further increased the transit modal split. To minimize the impact on the Gardiner Expressway prior to widening, it would therefore be advantageous to attempt to maximize transit ridership by expanding the high priority GO Rail services (i.e. Milton, Richmond Hill and Georgetown). Furthermore, T.S.M. strategies should be examined thoroughly so that appropriate measures can be implemented to maximize the benefits of the proposed physical and operational improvements already planned within the Gardiner corridor. The need for an improved north-west road facility, partially as further relief to the Gardiner, could then be more easily determined, as it is possible that given the current situation of demand being greater than capacity and the continuing population growth in the west, the extra capacity provided by the Gardiner widening could potentially be used up very quickly.

In summary, while the Gardiner widening and Front Street extension are the highest overall priorities, incremental expansion of GO Rail services is the highest transit priority. The need and timing for additional road improvements specifically to serve Central Area development are difficult to foresee and will depend on future trends of many dependent factors.

5.10.3 Inner Urban Area (P.D.2 and 3)

While there are no doubt many individual development issues for this area, the following discussion will focus on three main issues:

- support of industrial development in P.D.2 (west Toronto);
- support of industrial development in P.D.3 (mostly City of York); and
- achievement of City of York's goals with respect to Eglinton Avenue West.

Other issues, particularly declining population and labour force were discussed in section 5.10.1.

Planning District 2

The City of Toronto have policies in place to support the retention of industry in the City. In the 1970's a large number of manufacturing/warehousing jobs were lost in P.D.2. Since 1982, the number of jobs in this category has stabilized at around 11,000. There are many factors affecting the attractiveness of an area in which to locate (e.g. taxes, land costs, proximity to markets, etc), transportation being just one. From the recent Metro Goods Movement Study transportation factors which are important for industry include:

- good access to the expressway system for fast distribution of goods (a high dependency on expressways was demonstrated for both location of firm and orientation of markets);
- high standard arterial road system to facilitate the movement of increasingly larger trucks; and
- goods pickup and delivery facilities (off-street) for easy manoeuvering.

The distribution of truck trips from Zone 2 (similar to P.D.2), as found by the Metro Goods Movement Study and shown in Exhibit 35 illustrates that 72% of the generated truck trips have destinations (or stop-off points) in the inner urban area itself (i.e. between the Humber River, Highway 401 and Victoria Park Avenue). In terms of serving the inner area market, firms in P.D.2 having to depend almost totally on the arterial road system despite relative proximity, do not have such good access as firms located around the expressway system. This is true particularly in the off-peak when a lane is lost on many roads for on-street parking. The linkages possibly reflect the traditional market place (i.e. the older parts of Metro) for this area which has not changed over the years, unlike the newer areas where locational strategies have led to a high dependence on the expressway system for distribution of goods. There are minor linkages to Peel and York Regions and Scarborough which are probably more recent developments due to the expanding G.T.A. market place. Based on the linkage diagram, the road addition which would most improve access for businesses in this area would be the once considered 'Crosstown Expressway'. However, as no other indication of need for this link has arisen during the study, no further consideration is warranted.

In recognition of the increasing market place outside the inner urban area, the importance of good expressway access becomes more important. There are significant linkages to North York and some interaction with Vaughan and Markham which would benefit from improved access to Highways 400 and 401, while linkages to Mississauga would benefit most from improved access to the Gardiner Expressway. Given the location of industry in this area to be mostly in the Keele/Dufferin corridor, an extension of Black Creek Drive parallel to the CN tracks would be the most beneficial, while the Jamieson Avenue access to the Gardiner Expressway is of significant importance. The addition of new access points to the Gardiner west of Jamieson would also be of benefit but these are not physically feasible.

Given the more localized trip linkages for trucks (and for home-to-work commuter linkages also) the most beneficial improvements to the road system would appear to be operational improvements to the arterial road system over a wide area. For example, providing exclusive turning lanes for all movements on the Metro arterial road system wherever feasible, and protection of property where necessary for future consideration thereof (i.e. an extension of the strategy adopted in the Weston/St. Clair Traffic Management Study). Such a strategy would hopefully reduce the delay experienced at the many intersections where turning traffic have to share lanes with through traffic. Equally important to improve off-peak conditions would be the replacement of on-street with off-street parking wherever feasible.

Planning District 3

P.D.3 is similar in make-up to P.D.2 whereby the industrial areas are some of the oldest in Metro and are located around the CN and CP tracks. The goods movement linkages for this area (particularly Weston, show a dependency on Highway 401 for market access (unlike P.D.2). The value of the recently constructed Black Creek Drive can therefore be seen as an important addition to the road system for this area. As for P.D. 2, the importance of operational improvements to the arterial road system (i.e. intersection improvements and off-street parking) can also be demonstrated because of the high locally oriented trip patterns. Particularly, the eastern half of P.D.3 shows a high degree of inner urban area orientation. Local operational improvements would prove to be the most beneficial in regards to making the area more attractive from which to operate. Extension of either Black Creek Drive or Allen Road into the C.A. would not appear to be warranted to improve truck access, as there appears to be little interaction with the C.A. The main consideration with respect to access to Highway 401 where there is shown to be a high dependency, is the maintenance of a good level of service on Black Creek Drive and Highway 401 itself. Maintenance of a good level of service as is currently offered by Black Creek Drive is imperative, while consideration to maintain or improve mobility in the area would be worth considering to further improve the appeal of the area for industry. City of York staff have expressed support for the Black Creek Drive/Lawrence intersection, but not the Black Creek Drive/Eglinton intersection as land requirements would likely include some prime development land.

Eglinton Avenue

The issue of Eglinton Avenue development and transportation needs was discussed in Section 5.5. The following is discussion of the development issues.

The City of York is pursuing policies to encourage not only industrial development, as discussed in the previous section (P.D.3), but also higher density development along Eglinton Avenue West at the Weston Road, Black Creek Drive, Keele Street and Dufferin Street nodes. The Eglinton West Rapid Transit (E.W.R.T.) line is seen as the necessary transportation improvement to attract such development and compete with the major sub-centres elsewhere in the G.T.A. As analysis has shown that the E.W.R.T. is not justified as a transportation need in the short to medium term, (partly as a result of existing low levels of development and partly declining labour force). The City of York therefore, finds itself in a 'Catch 22' situation. It cannot attract the high density development that the Metro sub-centres can, each having a subway acting as a catalyst for development, and it cannot justify rapid transit construction because of low development levels. Given the Metro Official Plan policy to encourage the establishment of a 'principal focus' at York's Municipal Centre and the desire to break the 'Catch 22' situation, the most logical way forward is to make incremental transit and road improvements (i.e. minimize risk) with an initial focus in the Weston/Black Creek Drive area. This should build some momentum for development/re-development at this first main node which would in turn further establish the need for transportation improvements and associated pressures for redevelopment at subsequent Eglinton nodes previously mentioned. The potential first stage improvements include:

- an Eglinton GO station on the Georgetown line acting as a 'Gateway' in conjunction with an inter-regional bus service from Mississauga possibly using exclusive bus lanes on a widened Eglinton Avenue from Etobicoke Creek to the York Municipal Centre; and
- grade separation of the Black Creek Drive/Eglinton Avenue intersection (note City of York's concerns on previous page) and/or widening of Black Creek Drive north of Eglinton Avenue.

The latter could well be the key to intensification of development at the Municipal Centre as, regardless of rapid transit initiatives, the current 'close to capacity' conditions of the Black Creek Drive/Eglinton intersection, will always limit the development potential at the Municipal Centre. Grade separation therefore would open up a considerable amount of extra capacity to accommodate development.

The existing strip development further east along Eglinton Avenue does not lend itself to justifying and supporting rapid transit. In addition, the inadequate right-of-way, closely spaced signalized intersections and on-street parking will always inflict delay and hence result in an unattractive street environment. An urban renewal approach to increase existing densities (including increasing the housing stock), as well as as construction of off-street parking as part of the new development could rejuvenate the area and accelerate the justification for implementing a full scale E.W.R.T. line.

5.10.4 Etobicoke

In 1981, Peel/Halton residents made up 15% of the Etobicoke work force. This is forecast to steadily increase to 39% by 2011 (44% if York Region work force is included). This is due to the declining labour force of most of west Metro as well as an increasing tendency for Metro residents to work outside Metro. The peak period transit modal split at the Peel/Metro boundary is currently at 22%. Due to road capacity limitations, the 2011 transit modal split needed is in the region of 40% to 50% (depending on the land use forecast and whether certain road improvements are carried out). It is a matter of opinion and debate whether the higher range (associated with M1-86 land use), could ever be achieved given the diversity of O-D's and the resulting difficulty to justify rapid transit (other than serving the Central Area). This somewhat puts into question the validity of the M1-86 forecasts as being feasibly supported by the transportation system. This possibility notwithstanding, the implications for future development in Etobicoke are that all future transportation initiatives need to serve the inter-regional market and have a transit focus. Currently, most Mississauga Transit (M.T.) routes terminate in the Kipling/Islington Centre. A first phase of the Mississauga Busway will do likewise, probably by 1991, and will be a positive addition to Mississauga transit service, thereby reinforcing the centre as a transit oriented sub-centre as designated in the Metro Official Plan. However, the busway will only serve the northern part of Mississauga (and Brampton to some extent); given the diversity of O-D's there is a continued need to improve services from other parts of Mississauga.

There remains a question of whether all the other development in Etobicoke can achieve a high enough transit modal split for growth to continue over the next 25 years. The current orientation of cross-boundary bus services do not lend themselves to facilitating transfers to TTC routes serving north and south Etobicoke. The pressing near term need to support Etobicoke development is to rationalize transit services to provide a transit grid to serve the diverse trip origins and destinations. In the longer term the higher cross-boundary transit modal splits are unlikely to be achieved on the basis of bus service alone. Given the north-south scatter of trip destinations in Etobicoke, a north-south rapid transit distribution service would appear to be the obvious solution tying together the main employment concentrations along a transit spine. This concept is being investigated in the current "Northwest Rapid Transit Corridor Study". In addition, a number of high capacity bus routes (e.g. bus lanes) from Mississauga to this line would be necessary in addition to the busway. For the higher growth forecasts, ridership on each bus route would have to average 2,000 passengers in the peak hour. This is unlikely to happen; some will undoubtedly attract more, some less. The most obvious candidate to justify higher order transit, (which the City of Mississauga may wish to consider further) would be for bus lanes on a widened Dundas Street through Mississauga to the Islington/Kipling Centre. Other potential routes similarly worthy of further consideration would include Lakeshore, possibly through an extension of the Lakeshore streetcar service on its own right-of-way from Long Branch into Mississauga. Each rapid transit route considered would undoubtedly be surface transit (bus, streetcar) as ridership would unlikely ever exceed a range of 5,000 to 7,000 (unless residential development were significantly intensified along a route). For example, Mississauga Transit estimates ridership on the Mississauga Busway in 1993 to be 1,000 passengers in the peak hour.

Along with development of a transit priority grid, there would have to be a rationalization of future development along these lines, particularly for employment growth in Etobicoke, not only to ultimately justify the need for rapid transit, but also to enable the high modal split to be achieved. If development continues in north Etobicoke on a spread out low density basis, regardless of rapid transit, the higher transit modal split would still not be achieved. The establishment of the Highway 27/Rexdale node as the second major centre within Etobicoke capable of being served by a future rapid transit line would certainly help in this regard. The message for Etobicoke in this discussion, is therefore, the need to promote development around future rapid transit lines and possibly at the expense of lower development levels than are currently envisaged for sites away from the future rapid transit lines. This is in effect, an extension of the Metro Official Plan,this time with transit oriented secondary centres and corridors. In short, with a declining Metro labour force, long term development levels in Etobicoke are potentially threatened unless a pro-transit strategy and focusing of development is established.

There is one problem with this strategy in that a complete north-south RT line in Etobicoke may not be feasible, subject to further consideration in the current rapid transit corridor study. Following the outcome with respect to designation of specific rapid transit corridors in Etobicoke, a plan will need to be developed to establish the appropriate development guidelines as well as to phase development appropriately to establish a rapid transit grid.

5.10.5 North York

The support of North York development has similar implications to those identified for Etobicoke. This time, where non-Metro residents made up 17% of the North York work force (P.D. 10 and 11 only), in 1981, it is forecast to steadily increase to 32% by 2011. Most of this non-Metro work force will be residents of York Region (approximately 60%), while about a third of the non-Metro work force will be Peel/Halton residents. Another way of expressing this is that while there is a forecast increase of 10,700 peak hour person trips into P.D.10 and 11 between 1981 and 2011, there is a forecast increase in non-Metro resident trips to P.D. 10 and 11 of 12,400. In other words, a reduction of 1,700 peak hour trips from Metro to P.D. 10 and 11 during this time. Again this shows the future support of development to be entirely dependent on providing adequate inter-regional transportation capacity.

The North York City Centre is now developing as a 'transit-oriented' sub-centre. Currently intersections in the area between Dufferin and Bayview, Steeles and Finch are operating near to or at capacity. Metro Roads and Traffic have in their current 5 year program, plans to widen Bathurst Street, Sheppard Avenue (not yet approved by Council) and Steeles Avenue West. Bayview Avenue south of Sheppard to Highway 401 and north of Finch to Steeles, has also been identified as requiring widening in the North Yonge Centre Transportation Study. Based on current growth rates of traffic in this area (particularly southbound) these widenings will only just manage to keep up with the increase in traffic volumes. Construction of the central section of Highway 407 which will benefit Steeles Avenue (and possibly Finch Avenue), is a long way off, possibly late 1990's. Dufferin Street appears to be the only other option for widening in the central section of North York. Discussion in previous papers has identified the widening of Dufferin to be used for exclusive bus service to encourage a greater transit modal split from Vaughan primarily to the Central Area . If either the Spadina subway is extended or another type of exclusive transit facility is justified within the Dufferin Street right-of-way, the Dufferin lanes could be returned to all vehicle use. Given the limited road improvements possible in this area, and the high forecast demands in the short and long term, a pro-transit strategy has to be taken to accommodate most of the increase in inter-regional commuting to the sub-centre. The current York Region transit rationalization study should address the immediate needs of increased cross-boundary transit usage, while the numerous road widenings should take care of increases in travel demand through to the mid-to-late 1990's.

Long term base case transit forecasts of trips from York Region to the central part of North York show a transit demand on Yonge Street of 4,400 (all-or-nothing assignment). Of this demand 45% is destined to the Central Area, 30% to the North York City Centre and 11% to the rest of the Yonge Corridor. Although this is an all-or-nothing assignment, a significant amount of this ridership would be expected to travel southbound into Metro along other routes and then distribute east-west in Metro (unlike the assignment which is obviously assigning east-west in York Region and southbound along the Yonge corridor). Ridership on the Yonge GO bus crossing Steeles Avenue in 1985 was approximately 1,000 passengers (approximately 40 buses/hour). Given the strong growth in Yonge Corridor employment and the continuing tendency for residential development in York Region still to be centered around Yonge (although increasing in an east-west spread towards Dufferin), the Yonge corridor will continue to grow in importance as a transit corridor. For example, 2011 (all-or-nothing) transit assignment from Thornhill/Richmond Hill to the North Yonge Centre alone is forecast to be 3,400 passengers/hour and a further 1,300 to the Yonge corridor (excluding the C.A.). The C.A. while also showing a heavy ridership increase is less likely to transpire because of the competition with the Richmond Hill GO Rail service. There is enough evidence to suggest however that the adoption of exclusive bus lanes on Yonge Street, from Finch Avenue will likely be needed in the long term to ensure sufficient transit capacity in the Yonge corridor. Construction of east-west rapid transit (i.e. Sheppard subway) would deter this need further. As mentioned, the residential development taking place in York Region is still very much centered around a growing north-south spine between Dufferin and Bayview, which explains the very high travel growth forecast for the central boundary section and explains the justification for higher transit capacity for Dufferin and Yonge connecting with the subways, given also the major employment growth in Metro centered around the subway system.

In addition to this, there will be a significant increase in commuters from York Region accessing the employment areas around Finch and Steeles Avenue west of Bathurst Street. The widening of Steeles Avenue West is proceeding and is extremely urgent as an effective Highway 407 will be sometime off. Widening of Finch Avenue West could become necessary in the future depending on the rate of development in the area and the effect of the first stage of Highway 407 in relieving Steeles Avenue and Finch Avenue. In the long run, while a consolidation and northerly extension of a cross-boundary transit grid will cater to demand for the foreseeable future, due to the future high modal splits (46-60%) required for the central section of the York/Metro boundary, a focusing of development around a Finch (west of Spadina subway) rapid transit line could be necessary as low density housing development in York Region with low density commercial/industrial development around Finch will not support such a high modal split.

York University provides one location along the Finch corridor where such a concentration could occur. Much of the York University campus is not developed and the administration have ambitions to develop the site and to extend the University/Spadina subway to the campus. Although not justified in its own right, as part of a system the University is a major node that would undoubtedly become part of a rapid transit strategy, whether it be a north-south line and/or an east-west line. The Northwest Metro Rapid Transit Corridor Study is currently addressing this issue.

Downsview Airport

Downsview airport is another site in North York which, if redeveloped has tremendous development potential. A recent Federal report by Stephen McLaughlin, concluded that if "the physical plant at the Canadian Forces Base Toronto was consolidated and rationalized", at least 250 acres would be available for residential and limited commercial use, enough to house 15,000 people. As the site has also been ear-marked for use as an "Olympic Village", the pursuit of a partial or full scale redevelopment would have to await a decision on the location of the 1996 Olympic Games. As the transportation benefits of an increase in the Metro population have been identified, the development of a substantial amount of housing on the site with its good subway access is very appealing. While the site has previously been seen as a major mixed use sub-centre similar to the North York Centre, it may be more appropriate to have more of a residential focus. Future uses would have to be determined by extensive study. There remains a major opportunity for redevelopment should the Air Force Base and the DeHavilland operations be moved and a minor but significant potential should the existing 'physical plant be consolidated'.

6.0 SUMMARY OF STUDY FINDINGS AND CONCLUSIONS

The study has assessed transportation conditions within northwest Metro Toronto from both an overview perspective, which looked at conditions on a sub-area and corridor basis and from the viewpoint of specific issues, such as individual roadways or transit routes, within the study area. This chapter provides a summary of the overview and then addresses the overall study area needs by merging the overview and analysis of specific issues and summarizing into three basic categories as follows:

- Moving People;
- Moving Goods; and
- Support of Development.

6.1 OVERVIEW

The overall assessment of the study area was carried out by firstly analyzing existing conditions for both road and transit and then secondly by assessing how these conditions are likely to change in the future.

6.1.1 Existing Conditions

Roads

From the overview assessment of existing roadway operating conditions within the northwest Metro study area the major existing problem areas are as follows:

- The crossing of the Peel/Metro boundary between Highway 401 and the Lake;
- The Gardiner corridor between the Humber River and the Central Area;

- The crossing of the York/Metro boundary in the central section of Metro between Dufferin Street and Bayview Avenue, including the portion of the study area of North York bounded by Dufferin, Steeles, Bathurst and Sheppard;
- The majority of the inner area including Planning Districts #2 and #3. This area includes the major bottleneck at the southerly terminus of Allen Road; and
- Highway 401 through Etobicoke.

To understand the nature of the problems in the areas identified above, the origins and destinations of vehicles travelling through the areas were estimated using the Metro travel demand model and cordon count trends were examined. This assessment indicated the following:

- Approximately 55-60% of the auto traffic crossing the Peel/Metro boundary in the morning peak is destined to Etobicoke or the airport. This is due, primarily, to a low transit modal split to north and south Etobicoke from Peel Region (0% - 10% on the whole). The past increases in traffic east of the boundary have shown up mainly on Hwy. 401 and the Q.E.W./Gardiner which shows the dependency on the expressway system for the increasing longer distance inter-regional trips;
- A recent survey of traffic on the Gardiner Expressway undertaken for the City of Toronto found that 70% of the a.m. peak period eastbound vehicles exiting to the downtown originate west of Metro;
- Approximately 50% - 60% of the traffic crossing the York/Metro boundary is destined to the outer Metropolitan area north of Highway 401;
- The inner urban area trip making patterns for both auto and trucks are relatively short distance, localized trips. The area shows a relatively high degree of self containment, although inter-regional trips are starting to replace some local trips due to demographic trends; and

- The Highway 401 corridor, as mentioned above, has experienced large increases in traffic over the last 10 years due mainly to the increase in long distance inter-regional commuting. There is no up-to-date O-D information for the critical section through Etobicoke.

Transit

From the overview assessment of existing transit operating conditions within the northwest Metro study area, it can be concluded that:

- There are no capacity deficiencies within the study area;
- Bus operating speeds within the Central Area of Metro are particularly low. Beyond this area, the poorest operating speeds within the study area are experienced on east-west routes in Planning District #3. In other words, the older urban streets offer lower transit (and presumably auto) speeds;
- Local transit services are not totally co-ordinated at the Regional boundaries resulting in a loss of the complete grid service offered by the TTC within Metro; and
- Potential latent peak period demand exists on the Milton, Georgetown and Richmond Hill GO Rail lines due to the current limited service offered by these lines.

6.1.2 Future Conditions

The forecasting of future peak period travel demand for the study area is largely dependent on estimates of the level and distribution of future population (or more specifically employed labour force) and employment.

Three land use forecast scenarios have been assessed for each of three horizon years; 1991, 2001 and 2011. The three scenarios were prepared by (1) the Metro Planning Department, (2) Peel Region and (3) the Ministry of Transportation. There are some differences amongst these three forecasts and these were discussed in chapter 4. Exhibit 4.1

shows the 2011 population and employment estimates by Region for each of the three forecasts. The major trends resulting from all three forecasts are similar however, and indicate the following:

- o A limited growth in population is forecast for Metro Toronto. Metro's M1-86 forecast indicates a growth in population of approximately 40,000 people (2%) between 1985 and 2011;
- o A significant reduction in the ratio of Metro labour force/employment is projected by the year 2011. Metro's M1-86 forecast indicates a reduction from 1.14 in 1981 to 0.83 in 2011;
- o A significant increase in employment is forecast for Metro Toronto. Metro's M1-86 forecast indicates a growth in employment of approximately 300,000 jobs (25%) between 1985 and 2011, a third of which would be in the Central Area, a third in the sub-centres and a third elsewhere. (See Exhibit 4.1 for distribution of employment growth in the study area);
- o A significant increase in population and employment is forecast for Peel and York. Metro's M1-86 forecast indicates the following:

  - Peel population increase of 465,000 people (82%);
  - Peel employment increase of 248,000 jobs (92%);
  - York population increase of 268,000 people (92%); and
  - York employment increase of 121,000 jobs (82%).

  These increases are from 1985 to 2011 except for the Peel employment projections which are from 1981 to 2011 as 1985 totals were not available.

A summary of the key consequences of the forecasts is as follows:

- o the major growth is forecast to continue to be inbound at the Metro boundary and in particular:
  - Peel/Metro boundary (Highway 401 to Lake); and
  - York/Metro boundary (Dufferin Street to Bayview Avenue);

- home-to-work trip lengths are forecast to increase significantly due to the growing distance between Metro jobs and the increasing regional labour force. This will mean that the demand for commuter rail service will grow significantly, and that a greater share of auto trips will take place on expressways;
- growth in outbound traffic is only significant for north Etobicoke (screenlines 3 and 4) where inbound and outbound volumes stay roughly equal, otherwise outbound growth is generally little to 1991 with no growth forecast beyond 1991 (the peak in the outbound direction could well be between 1991 and 2001, i.e. a few years after Metro E.L.F. peaks);
- main growth into Central Area is from Peel/Halton followed in magnitude by York and Durham respectively;
- a decline in trips from most parts of Metro (other than P.D.1) to the Central Area and in many areas a decline is forecast due to a fall of between 10% and 20% in population and employed labour force in some of the more mature areas of Metro, together with an increasing scatter of destinations (both within and outside Metro) due to increasing job opportunities elsewhere. This is likely to lead to a decline in peak hour TTC ridership on many routes in the inner urban areas. Growth in TTC ridership in the study area will be due to inter-regional trips mostly in the outer Metropolitan area;
- major growth forecast for the Q.E.W./Gardiner corridor;
- no growth (or decline) forecast for road and transit demand in inner Metropolitan areas (i.e. York and West Toronto);
- significant growth (but smaller than cross-boundary growth) forecast for Highway 401 screenline from the north and little or no growth forecast for North Toronto screenline from the north, due to a compensating balance of increasing inter-regional commuting and a decrease in trips originating in Metro; and
- significant growth forecast across Humber River and CN Newmarket screenlines (Highway 401 to Steeles Avenue); growth mainly on Highway 401.

The essential implication of these forecasts for the study area is that based on current demographic trends, the justification for adding capacity to the transportation system in northwest Metro is due to growth in travel demand that is based almost entirely on the need to facilitate the movement of non-Metro residents to Metro jobs.

From this overview assessment of future conditions within the northwest Metro study area and based on assignments to the existing network, it appears that the declining labour force in many parts of the study area and Metro as a whole, together with the employment growth in Metro will mean that there is a strong tendency for short distance, internal Metro trips, to be replaced by longer distance inter-regional trips. This is particularly true for the Central Area which is surrounded by an inner area which is forecast to experience the largest drop in employed labour force. The implications of this are that the increasing number of longer distance trips will place demands on expressways and commuter rail facilities, while the overall transit modal split within Metro is likely to decline. The major growth corridors can be highlighted as follows:

- The crossing of the Peel/Metro boundary south of Highway 401;
- The crossing of the York/Metro boundary (Dufferin-Bayview);
- The Q.E.W./Gardiner corridor between the Humber River and the Central Area; and
- The Highway 401 corridor through Etobicoke and western North York.

All four corridors were identified as current deficiencies indicating the urgent need to address these problem areas. The only area with current deficiencies that is not forecast to undergo any major increase in travel demand is the inner urban area.

It should be noted that the rate of increase in travel demand at the Peel/Metro and York/Metro boundaries is extremely sensitive to the amount and distribution of population and employment growth outside

Metro. Recent forecasts (MTO) appear to be showing a shift in growth to York Region and hence York to Metro trips. The sensitivity of these forecasts have particular significance for long term requirements, however, recommendations have focussed more on near to medium term needs, while noting the likely strategies needed to deal with long term requirements. It should also be noted that a major increase in Metro population projections would have a significant effect on long term transportation needs by reducing inter-regional demands.

6.2 MOVING PEOPLE

Discussion related to the movement of people has been structured to address firstly the accessibility between the Northwest and the Central Area, secondly the issue of inter-regional travel in so far as it affects the Northwest area and thirdly the movement within Northwest Metro itself.

6.2.1 Central Area

Accessibility into the Central area from the Northwest can presently be characterized in the following manner:

- Accessibility into the Central Area from the Northwest is presently provided by a transportation grid system that is essentially north-south/east-west in nature, whereas the move between the two areas is in fact from the northwest to the southeast, i.e. the actual move is at 45 degrees to the basic grid. This is particularly applicable to transit routing within the area with the exception of the Georgetown GO Train service which does cut across the basic grid;
- The outer parts of Northwest Metro do not provide a significant number of Central Area employees. (Approximately 1% of Central Area employees are from Planning District #9, i.e. North Etobicoke and this demand currently experiences a 73% transit modal split);

- Demand currently exceeds capacity on the Gardiner Expressway, resulting in numerous slow downs and stoppages;
- The majority of demand on the Gardiner Expressway accessing the Central Area, is from west of Metro. (Approximately 70% of the a.m. peak period traffic exiting to the downtown is from Peel/Halton); and
- Transit access from the north (York Region) is not as good as from the west (Peel/Halton) and this is reflected in a current lower transit modal split from the north.

Major increases in employment (102,000 between 1985 and 2011) are projected for the Central Area. The population that will fill these positions is projected to be located within either the Central Area or the Regions outside of Metro Toronto. A decline in labour force is forecast for the areas of Metropolitan Toronto within the study area other than the Central Area itself. The results of these land use changes are that:

> future growth in demand for access to the Central Area will be concentrated almost entirely from the outlying Regions (primarily Peel) and the Central Area itself with a net reduction from the northwest Metro area as a whole and particularly the inner urban area.

The future growth in demand will place increased pressures on the QEW/Gardiner Expressway corridor. Implementation of a corridor traffic management system has been approved by Metropolitan Council and in addition proposals are presently being considered for the widening of the Gardiner Expressway and the westerly extension of Front Street to connect to the Gardiner. Even so, it will be necessary to provide additional capacity to accommodate the future changes in demand. In this regard transportation system management (TSM) measures such as the designation of HOV lanes and/or reversible lanes, if feasible, would provide additional "through-put". Therefore,

CONCLUSION NO. 1:

to maximize the utilization of future Q.E.W./Gardiner corridor capacity, Metropolitan Toronto and the Ministry of Transportation in consultation with the affected Municipalities, should immediately review the feasibility of implementing transportation system management (T.S.M.) measures, such as high occupancy vehicle (H.O.V.) lanes and/or reversible lanes.

The future growth in demand for access to the Central Area will also place increasing pressures on commuter rail services. The Province presently provides all day commuter rail service along the Q.E.W./Gardiner corridor. It is anticipated that operational improvements will be required on this line as demand increases. Four further commuter rail lines to the north and west (Milton, Georgetown, Bradford and Richmond Hill) presently provide only peak period service and it is likely there is a current latent demand for these services (particularly the Milton line) if more frequent service was available. It should be stressed that in keeping with Metropolitan Official Plan policies, the expansion of GO Rail services should be implemented incrementally over an extended period of time so as to sustain, but not promote, growth in the Central Area. It is imperative therefore, that Metropolitan staff are involved in the development of a staging strategy for GO Rail improvements.

As GO Rail improvements are clearly needed in the future, it is beneficial that service expansion benefits other Metropolitan centres and residents wherever possible. For example, the Milton line should help to support growth at the Islington/Kipling Centre. Similarly, the addition of a station at Eglinton Avenue on the Georgetown line could support the City of York's development aspirations in the vicinity of their municipal centre. Additionally, the latter would improve access time to the Central Area for local residents. Improved service on the

Georgetown line would also improve considerably the access time to the Central Area for northern Etobicoke residents. Therefore,

CONCLUSION NO. 2:

to serve the continuing needs of the Central Area, the Ministry of Transportation should:

(a) continue to address the need for capacity improvements on the Lakeshore West GO Rail line;

(b) initiate environmental and feasibility studies for upgrading service (including the provision of off-peak service) on the Milton, Georgetown, and Richmond Hill GO Rail lines, the study of the Georgetown line to specifically include consideration of new and/or relocated stations within Metropolitan Toronto; and

(c) develop an overall implementation strategy for all GO Rail improvements in close consultation with staff of each of the Regions in the G.T.A. including Metropolitan Toronto, such strategy to address line priorities and staging of improvements for each line.

6.2.2. Inter-Regional Travel

As discussed in both the Overview and the Central Area sections of this chapter the greatest demand for transportation capacity in the northwest, is to cater to the growing inter-regional market.

The West Metro Boundary Transportation Review previously addressed the issue of the increase in travel demand expected at the Peel/Metro boundary. Additional work carried out for this study has added confidence to many of the conclusions of that Review.

Existing conditions at the Peel/Metro and in the vicinity of York/Metro boundary screenlines can be characterized in the following manner:

- The Peel/Metro screenline between Highway 401 and the Lake and the York/Metro screenline in the central section (between Dufferin and Bayview) are presently experiencing traffic volumes that are at or approaching theoretical capacity;

- Specific characteristics of the existing deficiencies at the Peel/Metro boundary include the following:
  - Low auto speeds presently occur between the boundary and Highway 427 on Eglinton and Burnhamthorpe;
  - Roads traversing the Peel/Metro boundary are rated as being close to, or at capacity from Burnhamthorpe in the north to Lakeshore Boulevard in the south. The construction of the Highway 401 collector lanes has provided some relief to boundary roads since 1985;
  - Pressures due to growth in auto traffic have increased between 1975 and 1985 at a higher rate than anywhere else in Metro, particularly west of Highway 427 and on the QEW/Gardiner and Highway 401;
  - Transit trips have been growing at a greater rate than auto trips, (hence transit modal split has been increasing), but not by greater volumes;
  - It is estimated that over 72% of transit ridership crossing the Peel/Metro boundary is destined to the Toronto Central Area;
  - It is estimated that close to 60% of auto trips currently crossing the Peel/Metro boundary are destined to Etobicoke or the airport, (i.e. do not proceed east of the Humber River);
  - Transit modal split for relatively short distance trips into Etobicoke is extremely low (less than 10% and close to 0% for some areas);
  - Closed door transit service operated in Metro by Mississauga Transit is perceived as a nuisance by Etobicoke residents and is also potentially cost inefficient; and

  - The location of Highway 427 east of the Peel/Metro boundary exacerbates the problems associated with the municipal boundary as this expressway is a major distributor of trips to all parts of Metro. The heavy congestion experienced immediately west of Highway 427 (particularly at signalized intersections), is that which would normally be expected on arterial roads which interchange with an expressway;

- Specific deficiencies in the vicinity of the York/Metro boundary include the following:
  - The central section of the boundary (Dufferin to Bayview) currently is at, or near, capacity. Of this section, Dufferin and Bathurst are in the Northwest study area;
  - The intersections of Dufferin/Steeles, Dufferin/Finch, and to a lesser extent Bathurst/Steeles are currently close to capacity;
  - Increasing auto volumes in recent years has resulted in a lowering of transit operating speeds on the Finch, Steeles and Alness (Dufferin) routes;
  - Auto traffic in the Dufferin/Bathurst/Finch/Steeles area has predominantly local destinations with 50% of the inter-regional traffic destined north of Hwy. 401 (particularly the west part of North York - P.D. #10) with a scatter of origins mostly from Richmond Hill, Thornhill and North York itself; and
  - Current cross-boundary transit services generally focus on the subway. T.T.C. services which do go north of Steeles, do not extend fully into the major residential areas (although they are being extended further north gradually).

The existing demands at the Peel/Metro and York/Metro boundaries are projected to increase significantly. In particular, the following is of note:

- The greatest projected growth in travel across the screenlines within the study area is associated with the screenlines at the Peel/Metro boundary between Highway 401 and the Lake and the York/Metro boundary in the central section. This growth will result in a worsening of a problem that is already severe. This was discussed in the Overview section of this chapter; and
- The screenlines at the Peel/Metro boundary, north of Highway 401 and at the York/Metro boundary in the west section of Metro are presently operating well below capacity. However, these areas are projected to experience increases in travel of from 67% to 117% by 2011.

Future changes to the transportation system that will have an effect on inter-regional travel demands include the construction of Highway 407. When complete this will redirect some traffic (mainly Peel to North York trips) away from the Peel/Metro boundary to the York/Metro boundary. This will result in a net positive effect for North York by reducing east-west volumes on Steeles Avenue. Other localized arterial improvements are also proposed but the combined effects of these plus Highway 407 will not negate the need for a number of further transportation improvements in order to satisfy the future growth in demand.

The recommendations that were identified previously for improving access to the Central Area (i.e. the Q.E.W./Gardiner corridor study of TSM measures and the recommendations related to the up-grading of GO Rail service) are also applicable to the resolution of the inter-regional travel problems. In addition there are a number of specific proposals that have been identified to address the inter-regional travel problem.

One of the most cost-effective improvements would be to maximize the use of current transit services through fare integration and service coordination. However, this will not be sufficient to achieve the significant increases in cross-boundary transit modal split. New services will need to be implemented to provide a full system of continuous east-west routes which will serve all major suburban employment centres. In addition, key routes should be identified where transit priority measures such as peak period exclusive bus lanes (e.g. Eglinton Avenue) can be implemented. Therefore,

CONCLUSION NO. 3:

To encourage the use of transit and increase the transit modal split for trips crossing the West Metro boundary, the Ministry of Transportation should initiate, fund and co-ordinate an inter-agency study to:

(a) implement fare integration and service coordination;

(b) investigate new cross-boundary transit services to serve suburban employment concentrations in the Cities of Mississauga, Brampton, Etobicoke, York and North York; and

(c) designate key routes where transit priority measures (such as exclusive bus lanes during weekday peak periods) should be implemented, recognizing the various possible cross-boundary road improvements identified in this report;

It should be noted that the York Region Transit Study (currently being initiated) will address the same issues for York/Metro cross-boundary transit requirements.

With respect to road improvements crossing the congested section of the West Metro boundary south of Highway 401, several possibilities have been identified in the West Metro Boundary Transportation Review, including the widening of the Queensway and Dundas Street on the Mississauga side, and Lake Shore Boulevard and Eglinton Avenue on both sides, all to six lanes. The Eglinton Avenue widening from Fieldgate Drive to Renforth Drive is now being pursued by the City of

Mississauga to provide an important part of the first phase of its busway connection to the Bloor subway. While the widening of the Queensway and Dundas Street to provide proper lane balance on these facilities at the boundary would appear to be the next logical priorities, an implementation program for cross-boundary road improvements should not be established until the inter-agency study proposed in conclusion No.3 above is completed. In addition, through the City of Mississauga's response to the West Metro Boundary Transportation Review, the City is requesting Metropolitan Toronto to also consider the widening of Burnhamthorpe Road and the extension of Rathburn Road. While opposition to these projects by Etobicoke has been expressed in the past, it is clear that both could contribute significantly to the improvement of cross-boundary transit services and of overall congestion. Furthermore, since 50% - 60% of all cross-boundary auto trips have destinations west of the Humber River, these projects would provide support for continued employment growth in Etobicoke. Therefore,

CONCLUSION NO.4:

To provide additional road capacity across the West Metro boundary:

(a) a program for implementing road improvements should be established immediately following the completion of the proposed transit study referred to in the aforementioned conclusion No.3; and

(b) the City of Etobicoke should be requested to re-consider their position with respect to the widening of Burnhamthorpe Road west of Highway 427 and the extension of Rathburn Road across Etobicoke Creek.

It was previously noted that Vaughan to Central Area trips have a relatively low transit modal share. Improvements to the Bradford GO Rail line are not justified for some time and there is little short to medium term justification to extend the Spadina subway. However, the opportunity exists to improve the attractiveness of inter-regional transit by the extension of the reserved bus lanes on Dufferin Street north of Finch Avenue which would improve access to the University/Spadina subway for Central Area trips as well as shorter trips to North York. Therefore,

CONCLUSION NO. 5:

to encourage higher utilization of the Spadina subway and transit in general across the congested central section of the North Metro boundary:

(a) the Ministry of Transportation should initiate, fund and coordinate an inter-agency environmental and feasibility study for the widening of Dufferin Street to six lanes from Finch Avenue to a northern terminus in York Region, the additional lanes on Dufferin Street to be used for the extension of the existing weekday peak period exclusive bus lanes feeding Wilson station. Alternative locations for the northern terminus up to and including Highway 407, would be considered in the study, the latter being compatible with the provision of a 'gateway'; and

(b) the above-noted widening of Dufferin Street should be included in the 1989 5-year capital works programs of Metropolitan Toronto and the Region of York;

Additional road capacity across the central section of the North Metro boundary will also be required in the short term. While the widening of Bathurst Street from Sheppard Avenue to Steeles Avenue is included in Metropolitan Toronto's approved 1988 5-year Capital Works Program, no such provision has yet been made by the Region of York. Therefore,

CONCLUSION NO.6:

to provide additional road capacity across the central section of

the North Metro Boundary, the Region of York should be requested to include the widening of Bathurst Street north of Steeles Avenue in its 1989 5-year capital works program so that this widening can be coordinated with the widening south of Steeles Avenue by Metropolitan Toronto.

6.2.3 Within Northwest Metro

Section 6.1 outlined travel conditions in the study area on a sub-area basis. Key points in relation to movement within the inner urban part of Northwest Metro itself are summarized below:

- speed and v/c data point to a low level of mobility in the area east of the Humber River and south of Highway 401;
- transit speeds on many routes in this area are among the lowest in Metro due to the older urban streetscape (e.g. absence of left and right turn lanes at many intersections, on-street parking, narrow pavement widths, etc.);
- goods movement and journey-to-work patterns in this area are extremely localized with a resulting high dependency on the arterial road system; and
- due to a declining population and labour force in the area and only modest employment growth forecast, there is little growth (or decline) in travel demand forecast for the area. There is a resulting future tendency for some local trips to be replaced by longer distance inter-regional trips.

The current low level of service on roads in the area is a result of a streetscape built before the present extent of traffic growth could ever have been conceived. It is a wide spread problem and does not have a simple single road link solution. The St. Clair/Weston Traffic Management Study which covered most of the area (Eglinton Ave. to Bloor Street/Jane Street to Dufferin Street), identified intersection improvements to be carried out in the near and long term. It would similarly be appropriate to identify other intersection improvements and develop an implementation plan to effectively bring the area into the "twentieth century". Business would benefit from such improvements with improved mobility for trucks. Therefore,

CONCLUSION NO.7:

To improve traffic flow generally in the inner northwest Metro area (east of the Humber River and south of Highway 401), Metropolitan Toronto, in cooperation with the Cities of York, North York and Toronto, should develop an implementation plan for improvements at signalized intersections, with priority to be given to locations serving industrial areas;

Intersection improvements leading from this strategy would also tend to improve the low transit speeds in the area. However, if the issue of declining transit speeds is to be addressed, a more elaborate strategy may be needed. The transit speeds in the inner area of northwest Metro are among the lowest in Metro, particularly those near to the Central Area.

The following road segments in the study area have been identified as having the best potential to significantly reduce TTC operating costs and passenger trip time if improvements (either physical or operational) can be made.

Road	Section
Wilson Avenue	Bathurst to Walsh
Bathurst Street	Front to Wilson
Eglinton Avenue West	Avenue to Keele
Dufferin Street	Springhurst to Roselawn
King Street West	Roncesvalles to University
St. Clair Avenue	Bathurst to Lansdowne
Ossington	Queen to Davenport

(Spadina and Queen were identified similarily, but are the subject of specific study already)

In this regard it has to be acknowledged however, that certain transit priority measures (e.g. exclusive bus lanes, signal priority) can potentially impact negatively on the flow of other traffic. Alternatively, other measures such as H.O.V. lanes, reversible lanes, road and intersection widenings, can potentially improve conditions for all vehicles. Specific priority measures may therefore be appropriate for certain routes and not others depending on the impact on overall traffic operations. Therefore,

CONCLUSION NO.8:

To improve the quality of transit service generally in the inner northwest area, Metropolitan Toronto and the Toronto Transit Commission should undertake detailed operational analyses on the above seven road segments to determine the most effective ways of increasing transit speeds, with due consideration to the impact on other traffic and potential community impacts.

These analyses would need to be coordinated with the development of an implemention plan for undertaking intersection improvements in the area as outlined in the previous recommendation.

One key aspect of future travel demand, already noted, is the high demand forecast for the already congested expressway system in Northwest Metro. The Q.E.W./Gardiner corridor has been addressed in a previous section. Analysis carried out for Highway 401 has shown a continuing increase in inter-regional demand for this expressway. A complete Highway 407 will provide some relief, but not as much as the anticipated increase in demand. While some traffic could be expected to pursue alternative routes, most commuters tend to stay on an expressway for long distance trips. For example, Eglinton Avenue through Etobicoke generally operates at a good level of service, while the adjacent section of Highway 401 is heavily congested. Additionally, the importance of Highway 401 to the movement of goods in Metropolitan Toronto (and the G.T.A.) has also been identified. Therefore,

CONCLUSION No.9:

The Ministry of Transportation should initiate a joint study with Metropolitan Toronto and other affected municipalities to identify transportation (road and transit) improvements which might relieve Highway 401, such study to be based on the results of an up-to-date origin/destination survey of trips now using the highly congested section of Highway 401 between Highway 403 and the Humber River.

As Highway 401 cannot be widened further, potential arterial road improvements include the extension of Wilson Avenue across the Humber River to divert some local trips from the expressway and the widening of Eglinton Avenue. Additionally, the timing of the need for construction of the segment of Highway 407 between 410 and 427 could also be advanced. Possible transit improvements include GO Bus initiatives and other inter-regional transit initiatives via Eglinton Avenue and Highway 27.

Two other high class roadways, Black Creek Drive and Allen Road terminate near the centre of the study area. These two roads were considered in a discussion of road discontinuities in section 5.0. Black Creek Drive was not considered to be a major bottleneck at present, while it was difficult to determine whether any significant growth could be expected for this link given the spare capacity on parallel roads in particular. The extension would offer the possibility of improving access from west Toronto to Highway 401 and could possibly improve the appeal of the area as a location for industry, although currently only a small proportion of goods movements from this area would benefit from such a link.

The discontinuity of Allen Road at Eglinton Avenue is considered to be one of the major road deficiencies in the study area. This situation results in delay for traffic using Allen Road itself and also traffic using the local and arterial roads downstream of the discontinuity. Analysis has shown that additional turning lanes would be undesirable without making further downstream improvements on Eglinton Avenue, Bathurst St. and Dufferin St. and that a grade separation would require even greater downstream improvements (e.g. possible downstream grade separations) which are simply unrealistic.

Previously, plans to extend Allen Road to Spadina Road at Davenport Road have met with strong opposition from residents and businesses in the area. The City of Toronto has opposed any extension and the Ontario Government ceded to the City of Toronto a 3 ft. reserve across the south side of Eglinton Avenue as a barrier to an extension.

There are alternatives to extending Allen Road to Spadina Road which would offer some (but not maximum) relief to the Allen Road/Eglinton Avenue bottleneck, while providing varying degrees of impact both positive and negative. These alternatives include:

(a) provision of additional commuter parking facilities at Lawrence West, Glencairn and/or Eglinton West stations that would encourage commuters to conveniently transfer to the Spadina subway;

(b) extension of Black Creek Drive (potentially between 20-30% relief based on 1980 Allen Road O-D patterns);

(c) addition of extra turning lanes at Allen/Eglinton, together with necessary downstream improvements on Eglinton, Dufferin and Bathurst;

(d) partial extension of Allen to Bathurst and/or St. Clair Avenue; and

(e) extension of 2 lanes only (rather than 4) to either Spadina Road, Bathurst Street or St. Clair Avenue.

All alternatives would have both positive and negative effects on the traffic system, and community and environmental impacts in different areas. In making no change to the current road system there are continuing negative impacts also. Therefore,

CONCLUSION NO. 10:

To resolve the existing and future operational problems along Eglinton Avenue between Dufferin and Bathurst Streets, and to relieve other north-south roads in the corridor, Metropolitan Toronto should undertake an environmental and feasibility study for the southerly extension of the Allen Road, such study to include an analysis of the above-noted alternatives and to include a comprehensive cost/benefit analysis of all alternatives.

6.3 MOVING GOODS

The terms of reference for this study identified the need to address the needs of the goods movement industry. Two main issues have been addressed; specifically accessibility and impact on future development. The latter issue is discussed in the next section, 'Support of Development'.

Origin-destination data collected for the Metro Toronto Goods Movement Study found that the distribution of goods for any given location is dictated heavily by the road network serving the area.

This aspect of 'inter-dependence' has long been recognized in the analysis of home-to-work trip linkages. It is therefore impossible to identify any major truck corridor that is not satisfied by the current road system. Highway 401 being the highest capacity road link in Metro also carries double the truck volumes of any other expressway link. This is an indication of the importance of Highway 401 to the needs of the goods movement industry serving Metro. It can be demonstrated (see Section 5) that firms in Northwest Metro located near to Highway 427, 400 and 401 itself, serve their markets by using Highway 401 as a trunk distributor to other parts of the GTA from Peel through to Durham. Whether the location of operation is dictated by the location of the market place and orientation of the road system, or, the market place is dictated by the relative access from a particular location is not clear. What is clear, is the high dependency on the expressway system to achieve fast access to serve their customers.

The only part of the study area which does not show a high reliance on the expressway system in the distribution pattern is the west Toronto (P.D.2) area. This area does not have such good access to the expressway system. The area shows a high degree of 'localized' trip making into other parts of the inner urban area of Metro, which may well reflect that the market place of firms in this older inner urban area has not changed significantly over the years.

Another factor affecting goods movement needs is the trend over the last 80 years towards increasing truck size and axle weights. A further increase in truck length is currently under review. This trend has ongoing implications for highway design standards in any area, but is particularly relevant to the older inner urban areas of the Cities of York and Toronto (P.D.3 and P.D.2 in the study area) where the design standards of many roads in the area were initially developed up to 50 years ago.

The essential aim of goods movement operators is to minimize time spent in transit and hence costs. With this in mind, the conclusions with respect to the transportation needs of the goods movement industry in terms of accessibility are summarized below.

o Maintenance of a good level of service on the road system as a whole is paramount;

o The increasing trip length corresponding to significant growth in inter-regional trips into Metro in the coming years will exhibit a much greater dependency on the expressway system than in the past and therefore affect Highway 401 and the Q.E.W./Gardiner Expressway in particular;

- A continuing change in the economy from the industrial to service sector, for which the trip rates are greater, could increase the growth in truck traffic; and
- Increasing truck size will bring the need to upgrade roads and bridges to accommodate the wider turning circles and increased axle weights particularly in the older urban areas of northwest Metro. In addition, pick-up and delivery facilities in the older areas tend to be inadequate resulting in further inpacts on the road system.

These needs of the goods movement industry will be addressed partially by roadway improvements that are presently proposed such as the Gardiner Expressway widening, the Highway 407 construction and the Finch Avenue Extension. In addition, several of the recommendations identified in section 6.2 will also address these needs. In particular, these include recommendations regarding (i) the study of the Q.E.W./Gardiner corridor, (iv) the study of cross-boundary roadway improvements, (vi) the intersection improvement strategy for the inner urban area, (viii) the study of Highway 401 and (ix) the study of the Allen Road extension.

The needs of the goods movement industry support these recommendations and therefore no further explicit recommendations have been made to facilitate the movement of goods. Other improvements will potentially result through recommendations made in the Metro Toronto Goods Movement Study.

6.4 SUPPORT OF DEVELOPMENT

There are many inter-related considerations for development within and around Metro. However this chapter has been structured to concentrate the discussion under four main headings as follows:

- Central Area;
- Inner Urban Area (York and West Toronto);
- Etobicoke; and
- North York.

6.4.1 Central Area

Section 6.2 of this chapter provided a discussion of transportation issues for the Central Area (C.A.). A brief summary only, of the issues is reiterated here with emphasis on the support of development bearing in mind that Official Plan policies have the intent not to promote development in the C.A. (it does not need promotion), but to sustain development while promoting development in suburban centres:

- The growth in C.A. population is a key factor in reducing the impact on the transportation system serving the C.A.;
- If population growth could be stimulated within the rest of the inner urban area, the higher transit modal split from these areas (as opposed to inter-regional trips) could also benefit the C.A. and reduce the impact on the expressway system;
- It is anticipated that the short distance trips taking place wholly within the C.A. can be mostly accommodated on the existing transportation system with relatively minor improvements;
- The forecast large increase in inter-regional trips shows a continuation of current trends indicating growth in GO Rail ridership and expressway volumes. While widening of the Gardiner will provide some breathing space in providing extra capacity from the west (where the main growth is forecast), the clear trend of increasingly longer distance trips mainly from the west to the Central Area infers more future auto demand in the corridor; and

- Given the future travel demands, it is clear that development near to subway stations and particularly near to Union Station will likely achieve a higher inter-regional transit modal share. The downside of this however, is that the nearer to Union Station development occurs, the larger the catchment area for auto traffic on the Gardiner Expressway becomes, thus compounding the likely continued pressure on this link and the possible need to provide further relief in the long term by way of an improved north-south corridor.

The consideration of these issues leads to the reiteration of the recommendations included within the preceding sections, in particular recommendations (i) and (ii) dealing respectively with the investigation of transportation system management measures in the Q.E.W./Gardiner corridor and the study of upgrading GO Rail service. The timing of implementation of GO improvements is critical and Metro Toronto should be part of the decision making process. The Central Area Monitoring Program is an important element in determination of the timing of transportation improvements.

6.4.2 Inner Urban Area (York and West Toronto)

Support of development in this part of the study area has focussed on two aspects: specifically the support of industrial development in P.D.2 and P.D.3; and the achievement of the City of York's goals with respect to Eglinton Avenue and the development of a principle focus at York's Municipal Centre.

Industrial Development in P.D.2 and P.D.3

Data from the Metro Toronto Goods Movement Study led to the following general conclusions regarding the needs of industry:

- Good access to the expressway system for fast distribution of goods in an important factor in determining where a firm locates;
- much of the industry in this area was established on the basis of good access to the railways and the port. This is becoming less of

a factor for much of the industrial development now taking place in Metro;

- a high standard road network is required to accommodate an 80 year trend toward increasing truck size; and
- up-to-date off-street goods pick-up and delivery (P.U.D.) facilities allow easier manoeuvering.

Although data was not extensive enough to draw conclusions on a sub-area basis, there was enough evidence to suggest that industry will continue to relocate away from the older, inner urban areas of Metro, with transportation access being one, but not the only factor involved.

In terms of the factors identified above, the following conclusions were drawn in respect to the likelihood of P.D.2 and P.D.3 retaining or increasing industrial development:

- P.D.2 (mostly west Toronto);

  truck distribution patterns show much less of a dependency on the expressway network than any other area of the Greater Toronto Area in that 72% of the trips were destined to the inner urban area itself. This may reflect the geographical extent of the market place when the area first developed. The area is less equipped however, to take advantage of the increasing regional market place because of relatively poor expressway access.
- P.D.3 (mostly City of York);

  Truck trip patterns from this area show a high degree of dependency on Highway 401. Black Creek Drive has therefore been an important addition to the welfare of the industrial areas in this zone.

Both areas are not well suited to facilitating the movement of larger trucks because most of the arterial road system was developed anywhere up to 80 years ago, resulting in narrower pavement widths and basic intersection layouts which are further compounded by on-street parking in many locations. Additionally, off-street P.U.D. facilities are in many cases sub-standard (if they exist at all) with only redevelopment likely to result in any significant improvement. The Metro Goods Movement Study has recommended further study of this subject in an attempt to set standards for P.U.D. facilities.

Recently the St. Clair Ave./Weston Rd. Traffic Management Study recommended pursuit of numerous intersection improvements for the study area. Most of these would only be achieved through redevelopment over the longer term. Such a strategy extended to other parts of the older inner urban area would be appropriate in improving access for trucks in recognition of the more localized trip making and the increasing difficulty to be able to manoeuver large trucks. This approach was addressed in recommendation 6. Additionally, any improvements to the Allen Road/Eglinton Ave. bottleneck, recommendation 10, could provide an easing of congestion over a wide area.

Eglinton Avenue Development Issues

The City of York with its relatively small employment base (and hence tax assessment) is pursuing policies to encourage not only industrial development, but also higher density development along Eglinton Avenue west at the Weston Road, Black Creek Drive, Keele Street and Dufferin Street nodes. The City of York has identified the Eglinton West Rapid Transit (E.W.R.T.) line as the necessary catalyst to attract such development and compete with the major sub-centres elsewhere in the G.T.A. As analyses for this and previous studies have not shown a near term justification for construction of the E.W.R.T. basically because of the existing low levels of development (i.e. mostly strip commercial) and declining labour force, the City of York finds itself in a 'Catch 22' situation. It cannot attract the high density development that the Metro subcentres can, because they each have a subway acting as a catalyst for development. Given the Metro Official Plan policy to encourage the establishment of a 'principal focus' at York's Municipal Centre, the inclusion of the E.W.R.T. (through O.P.A. #8), and the desire to break the 'Catch 22' situation, the proposed approach is to pursue incremental transit and road improvements with an initial focus in the Weston/Black Creek Drive area. This should build some momentum for development/redevelopment at this first principal node, which should then further establish the need for future transit improvements. In addition the Ministry of Transportation is carrying out a 'gateway' study that includes the investigation of sites in this area. Therefore,

CONCLUSION NO.11:

To further enhance the development potential in the Eglinton West corridor:

(a) the Ministry of Transportation, as part of their current gateways study, should examine the feasibility of establishing a transportation gateway within the City of York in the Eglinton Avenue/Weston Road area in conjunction with a new GO station at Eglinton Avenue West on the Georgetown line;

(b) Metropolitan Toronto should undertake an environmental and feasibility study for the widening of Eglinton Avenue to six lanes from Renforth Drive to Black Creek Drive to provide additional road capacity and facilitate the implementation of inter-regional bus service which could support proposed development at Black Creek Drive and feed the proposed Eglinton West GO station; and

(c) Metropolitan Toronto and the City of York should undertake a joint transportation/land use review of the Eglinton corridor between Black Creek Drive and Bathurst Street which would:

   (i) investigate opportunities for increasing population and employment densities and prepare a detailed redevelopment plan for the corridor to promote development at a scale and density consistent with the future provision of the Eglinton West rapid transit line; and

(ii) **identify and evaluate ways of increasing transportation capacity in the corridor to satisfy the demands of new development until such time as a decision is made to proceed with the Eglinton West rapid transit line, such study to investigate the feasibility of minor pavement widenings, intersection improvements, expanded parking restrictions in conjunction with the provision of new off-street parking facilities, transit priority measures and any other appropriate transportation system management measures;**

6.4.3 Etobicoke

The inter-regional travel element is the only demand growth into Etobicoke. In the short to medium term, initiatives such as fare and service coordination, GO Rail expansion and the Mississauga Busway will all help in minimizing auto growth from Peel into Metro. However in the long term the high transit modal splits (40%-50% for 2011), that will be required because of limited road improvements, are arguably not achievable based on current trends of low density residential development in Peel (with the possible exception of the Mississauga City Centre) and (mostly) low density industrial/commercial development in Etobicoke.

Development of the Islington/Kipling Centre will be supported by recommendations (ii), (iii) and (iv). Additionally, establishment of transit services within a Northwest Rapid Transit Corridor (currently under study) in the medium to long term will be required. The current Northwest Metro Rapid Transit Corridor Study (mentioned above) is being undertaken to identify (for property protection) a north-south corridor in Etobicoke (with connections to the Mississauga Busway) and an east-west (Finch) corridor between Etobicoke and North York. Given the current situation of 60% of cross-boundary auto trips destined to Etobicoke or the airport, the north-south distributor line is particularly important. There is also forecast to be a large growth in

Peel to North York trips of which some would utilize a rapid transit service in the Northwest Corridor.

Long term commercial development in Etobicoke could be threatened unless there is a focussing of development around these (and possibly other) rapid transit lines in order to achieve the required overall high transit modal splits. Recommendation 3. goes some way to establishing the necessary cross-boundary transit grid.

The study of the northwest rapid transit corridor will focus attention on transit issues within Etobicoke. In this regard, it is noted that Etobicoke is now preparing a secondary plan for the Rexdale/Highway 27 Centre. This area, if served by rapid transit, has the potential to become a major suburban centre. The provision of an inter-regional bus terminal in the interim will be highly beneficial to the development of a multi-functional local centre in that it would encourage a transit oriented growth. Therefore,

CONCLUSION NO.12:

The City of Etobicoke should take all appropriate actions to ensure that:

(a) **the types, scale and urban forms of future development in the Rexdale/Highway 27 area are consistent with that of a Metropolitan suburban centre and that such development is capable of being effectively served by rapid transit.**

(b) **appropriate lands be identified and protected within the centre for the construction of an inter-regional bus terminal.**

6.4.4. North York

Previous discussion has dealt with the inter-regional issue associated with the movement across the York Region/Metro boundary. In particular this has addressed issues within North York and led to conclusion No.2 relating to GO Rail service, and No.5 relating to muncipal transit. The establishment of rapid transit from the west will support continued growth in the North York City Centre. Additionally, the capacity of a bus service operating in mixed traffic is forecast to be exceeded on Yonge Street, north of Finch Avenue in the medium to long term, which would require attention. Construction of the Sheppard subway would slow growth in the Yonge corridor (north of Sheppard).

Further development issues relate to the York University and Downsview Airport nodes. The conclusions relating to these two nodes are as follows:

- York University, even under ultimate development levels, does not in itself justify extension of the Spadina subway. It remains a major node in the consideration of overall systems needs for North York and, as such, is being considered further in the current Northwest Metro Rapid Transit Corridor Study. No recommendation therefore, is made at this time;
- A recent report has looked at the potential use of the Downsview Airport, should it ever be released for development. Extensions of Dufferin Street (north of Wilson Avenue) and the Spadina subway both could become high priority projects. The recent report concluded that a simple consolidation of infrastructure could result in available land to house 15,000 people. This land is currently ear-marked to be an 'Olympic Village' should Toronto host the 1996 Olympic Games. Given the conclusions and recommendations elsewhere in this report to boost Metro population, the development of a significant amount of housing at this node with the good rapid transit access available should be seriously considered if and when the site becomes available for redevelopment. No specific recommendations are however made as part of this study.

An essential conclusion on the needs analysis has been the fact that the justification for future increases in transportation capacity in North

York is almost entirely to cater to increases in inter-regional trips. The trips are almost certainly to be more auto dependent than the more transit oriented urban areas of Metro. This is in contrast to the limited possibilities for increasing cross-boundary road capacity particularly in the main growth areas. This dichotomy then reduces the viability of some of the long term development goals of some parts of Metro; in particular Etobicoke and North York. Again a focussing of development around rapid transit lines and corridors would be highly desirable. While recommendations have been made to cater to the travel demand forecasts as they appear today, it should be noted that alternative strategies are being considered to increase (or at least arrest the decline) in population and labour force of many parts of Metro, in particular the older urban areas from which higher transit usage can be expected. This would make the goal of transit oriented sub-centres more easily achievable.

7.0 SUMMARY OF CONCLUSIONS

It is concluded that:

CONCLUSION NO. 1:

to maximize the utilization of future Q.E.W./Gardiner corridor capacity, Metropolitan Toronto and the Ministry of Transportation in consultation with the affected Municipalities, should immediately review the feasibility of implementing transportation system management (T.S.M.) measures, such as high occupancy vehicle (H.O.V.) lanes and/or reversible lanes;

CONCLUSION NO. 2:

to serve the continuing needs of the Central Area, the Ministry of Transportation should:

(a) continue to address the need for capacity improvements on the Lakeshore West GO Rail line;

(b) initiate environmental and feasibility studies for upgrading service (including the provision of off-peak service) on the Milton, Georgetown, and Richmond Hill GO Rail lines, the study of the Georgetown line to specifically include consideration of new and/or relocated stations within Metropolitan Toronto; and

(c) develop an overall implementation strategy for all GO Rail improvements in close consultation with staff of each of the Regions in the G.T.A. including Metropolitan Toronto, such strategy to address line priorities and staging of improvements for each line;

CONCLUSION NO. 3:

to encourage the use of transit and increase the transit modal split for trips crossing the West Metro boundary, the Ministry of Transportation should initiate, fund and co-ordinate an inter-agency study to:

(a) implement fare integration and service coordination;

(b) investigate new cross-boundary transit services to serve suburban employment concentrations in the Cities of Mississauga, Brampton, Etobicoke, York and North York; and

(c) designate key routes where transit priority measures (such as exclusive bus lanes during weekday peak periods) should be implemented, recognizing the various possible cross-boundary road improvements identified in this report;

CONCLUSION NO.4:

to provide additional road capacity across the West Metro boundary:

(a) a program for implementing road improvements should be established immediately following the completion of the proposed transit study referred to in the aforementioned conclusion No.3; and

(b) the City of Etobicoke should be requested to re-consider their position with respect to the widening of Burnhamthorpe Road west of Highway 427 and the extension of Rathburn Road across Etobicoke Creek;

CONCLUSION NO. 5:

to encourage higher utilization of the Spadina subway and transit in general across the congested central section of the North Metro boundary:

(a) the Ministry of Transportation should initiate, fund and coordinate an inter-agency environmental and feasibility study for the widening of Dufferin Street to six lanes from Finch Avenue to a northern terminus in York Region, the additional lanes on Dufferin Street to be used for the extension of the existing weekday peak period exclusive bus lanes feeding Wilson station. Alternative locations for the northern terminus up to and including Highway 407, would be considered in the study, the latter being compatible with the provision of a 'gateway'; and

(b) the above-noted widening of Dufferin Street should be included in the 1989 5-year capital works programs of Metropolitan Toronto and the Region of York;

CONCLUSION NO.6:

to provide additional road capacity across the central section of the North Metro Boundary, the Region of York should be requested to include the widening of Bathurst Street north of Steeles Avenue in its 1989 5-year capital works program so that this widening can be coordinated with the widening south of Steeles Avenue by Metropolitan Toronto;

CONCLUSION NO.7:

to improve traffic flow generally in the inner northwest Metro area (east of the Humber River and south of Highway 401), Metropolitan Toronto, in cooperation with the Cities of York, North York and Toronto, should develop an implementation plan for improvements at signalized intersections, with priority to be given to locations serving industrial areas;

CONCLUSION NO.8:

to improve the quality of transit service generally in the inner northwest area, Metropolitan Toronto and the Toronto Transit Commission should undertake detailed operational analyses on the following seven road segments to determine the most effective ways of increasing transit speeds, with due consideration to the impact on other traffic and potential community impacts:

Road	Section
Wilson Avenue	Bathurst to Walsh
Bathurst Street	Front to Wilson
Eglinton Avenue West	Avenue to Keele
Dufferin Street	Springhurst to Roselawn
King Street West	Roncessvalles to University

Road	Section
St. Clair West	Bathurst to Lansdowne
Ossington	Queen to Davenport

CONCLUSION No.9:

the Ministry of Transportation should initiate a joint study with Metropolitan Toronto and other affected municipalities to identify transportation (road and transit) improvements which might relieve Highway 401, such study to be based on the results of an up-to-date origin/destination survey of trips now using the highly congested section of Highway 401 between Highway 403 and the Humber River;

CONCLUSION NO. 10:

to resolve the existing and future operational problems along Eglinton Avenue between Dufferin and Bathurst Streets, and to relieve other north-south roads in the corridor, Metropolitan Toronto should undertake an environmental and feasibility study for the southerly extension of the Allen Road, such study to include an analysis of all feasible alternatives, including those discussed in Section 6.0 of this report and to include a comprehensive cost/benefit analysis of all alternatives;

CONCLUSION NO.11:

to further enhance the development potential in the Eglinton West corridor:

(a) the Ministry of Transportation, as part of their current gateways study, should examine the feasibility of establishing a transportation gateway within the City of York in the Eglinton Avenue/Weston Road area in conjunction with a new GO station at Eglinton Avenue West on the Georgetown line;

(b) Metropolitan Toronto should undertake an environmental and feasibility study for the widening of Eglinton Avenue to six lanes from Renforth Drive to Black Creek Drive to provide additional road capacity and facilitate the implementation of inter-regional bus service which could support proposed development at Black Creek Drive and feed the proposed Eglinton West GO station; and

(c) Metropolitan Toronto and the City of York should undertake a joint transportation/land use review of the Eglinton corridor between Black Creek Drive and Bathurst Street which would:

  (i) investigate opportunities for increasing population and employment densities and prepare a detailed redevelopment plan for the corridor to promote development at a scale and density consistent with the future provision of the Eglinton West rapid transit line; and

  (ii) identify and evaluate ways of increasing transportation capacity in the corridor to satisfy the demands of new development until such time as a decision is made to proceed with the Eglinton West rapid transit line, such study to investigate the feasibility of minor pavement widenings, intersection improvements, expanded parking restrictions in conjunction with the provision of new off-street parking facilities, transit priority measures and any other appropriate transportation system management measures;

CONCLUSION NO.12:

the City of Etobicoke should take all appropriate actions to ensure that:

(a) the types, scale and urban forms of future development in the Rexdale/Highway 27 area are consistent with that of a Metropolitan suburban centre and that such development is capable of being effectively served by rapid transit; and

(b) appropriate lands be identified and protected within the Rexdale/Highway 27 centre for the construction of an inter-regional bus terminal.

APPENDIX A

TERMS OF REFERENCE

Northwest Metro Transportation Study

Terms of Reference

Phase One - Needs Analysis

Introduction

In December, 1985, the Metropolitan Chairman, in his inaugural address to Council, referred to the problem of transportation in the northwest corridor of Metropolitan Toronto and indicated that he would request the Technical Transportation Planning Committee (T.T.P.C.) to "present to a joint meeting of the Economic Development and Planning Committee and the Transportation Committee, a plan of action that will allow us to at least begin to cope with a deficiency that affects a large part of our population."

The T.T.P.C. has considered the Metropolitan Chairman's request and has concluded that a two phased approach to the Northwest Metro Transportation Study is appropriate. The first phase would be a documentation of existing conditions, assessment of future population and employment growth and resultant travel demands, and identification of specific problem areas and deficiencies. The second phase would include the identification and evaluation of alternative transportation initiatives capable of solving the identified problems. The attached Terms of Reference address the elements, organization and schedule of Phase One (Needs Analysis).

Background

The rationale for undertaking the Northwest Metro Transportation Study has been well documented in past reports and studies and is supported by current conditions and on-going analyses. In 1975, the Metropolitan Toronto Transportation Plan Review (M.T.T.P.R.), in its summary report (Report No.64 -"Choices for the Future") identified the northwest area of Metropolitan Toronto as a special problem area poorly served by both roads and transit. While various improvement options were discussed, further analysis was recommended prior to any decision by Metropolitan Council. Two of the options identified by the M.T.T.P.R., the extension of the Allen Expressway as an arterial road from Lawrence to Eglinton and the southerly arterial road extension of Highway No. 400 were acted upon. The Allen Road extension was completed in 1976 and Black Creek Drive, from Highway No. 400 to Weston Road was opened to traffic in 1982. A study of the impacts of the latter facility has been completed by the Metropolitan Planning Department and has been presented to the Transportation Committee. The information provided by this study will be used in a joint Metropolitan/City of Toronto traffic management study in the Weston Road/St. Clair Avenue area.

In April, 1985, an environmental and feasibility study of the extension of Finch Avenue West from Islington Avenue to Albion Road, as provided for in the Metropolitan Official Plan, was completed and is now being reviewed by the Ministry of the Environment. This study included a major needs analysis component which covered a large part of the Rexdale area. The Metropolitan

Planning Department is currently completing a West Metropolitan Boundary Transportation Review, which itself draws on previous studies such as the GO-ALRT Northern Section Study, Network 2011 and the Eglinton West Rapid Transit Study. The various recent studies have looked at portions of northwest Metropolitan Toronto and specific transportation issues. To date, the findings and conclusions have not been consolidated.

In addition to these (and other) studies, a number of issues and concerns have been identified which will directly affect northwest area transportation requirements. These include:

- current and future development proposals and initiatives by the Cities of Etobicoke, York and North York within the northwest sector of Metropolitan Toronto at locations such as Rexdale Boulevard/Highway No. 27, along Eglinton Avenue in the City of York, Dufferin Street/Finch Avenue and the eastern portion of the Downsview Airport area;
- faster than anticipated growth rates in the Woodbridge and Thornhill/Vaughan areas of the Region of York, (Metropolitan Council has requested that the latter be limited to a population of approximately 37,000 prior to construction of Highway No. 407 by the Provincial Government);
- concerns expressed by the industrial sector that impediments to efficient goods movement may limit the viability of industrial development (a large part of northwest Metropolitan Toronto is industrial in use and, therefore, the problems of goods movement are particularly relevant);
- declining transit schedule speeds due to increasing road congestion, particularly on Steeles Avenue West;
- transit access and service levels to major generators such as York University and Pearson International Airport;
- the need for, location and protection of future rapid transit corridors servicing the northwest area;
- continued concern for intersection improvements at Allen Road/Eglinton Avenue, an analysis of which Metropolitan Council has requested be included in the current study; and
- continued concern with access and capacity limitations between the northwest area and the Central Area of the City of Toronto.

The range of concerns, and the various studies previously noted, indicate that a variety of transportation deficiencies exist within northwest Metropolitan Toronto. As a first step to identifying potential solutions, a comprehensive review of previous work, documentation and analysis of existing conditions and identification of future deficiencies is required.

Study Area

The study area is shown on the attached Exhibit 1, which also shows major existing transportation facilities and major land uses within the northwest area of Metropolitan Toronto. While the northern and northwestern limits are shown as the Metropolitan boundary, the impacts of existing and future land use development beyond the boundary in the Regions of Peel (Malton and Brampton) and York (Vaughan) will be considered.

Scope of Work

The Needs Analysis for the Northwest Metro Transportation Study will concentrate on assembling, reviewing and consolidating the work of previous studies, with additional data collection and analysis as required, the intent being to make maximum use of material which is currently available.

In considering northwest area transportation requirements, the following specific issues will be addressed:

- road and transit access between the northwest and Central Area of the City of Toronto;
- the need for possible intersection improvements at Allen Road and Eglinton Avenue;
- support of development opportunities and concentrations identified in the Cities of Etobicoke, York and North York;
- service to industrial areas, with emphasis on goods movement requirements;
- localized operational difficulties on the road and transit systems;
- long-term rapid transit system expansion, with emphasis on identification of future needs and terminal requirements;
- cross-boundary travel requirements, with equal consideration given to reverse-flow access to developing industrial areas in the Regions of Peel and York.

Work Program Activities

The work program for the Needs Analysis phase will include four major elements:

A. Review and Documentation of Previous Reports and Studies.

- review and summarize previous reports;
- identify data deficiencies and need for additional data collection;
- summarize historical traffic and transit trends;
- identify recent transportation improvements within the study area.

B. Document Existing Transportation System Usage

- conduct additional counts and data collection as identified;
- conduct a goods movement origin-destination survey (to be done separately);
- summarize existing traffic and transit counts by screenline and for major facilities.

C. Determine Future Travel Demands

- review recent forecasts for the year 2011;
- undertake additional forecasts, if necessary, for the year 2011;
- based on short-term land use forecasts, extrapolate interim year (either 1991 or 1996) transportation forecasts;
- estimate interim and horizon year goods movements;
- summarize interim and horizon year travel demands by screenline, corridor and major facility, including estimates of future travel patterns.

D. Identify Deficiencies and Problem Areas

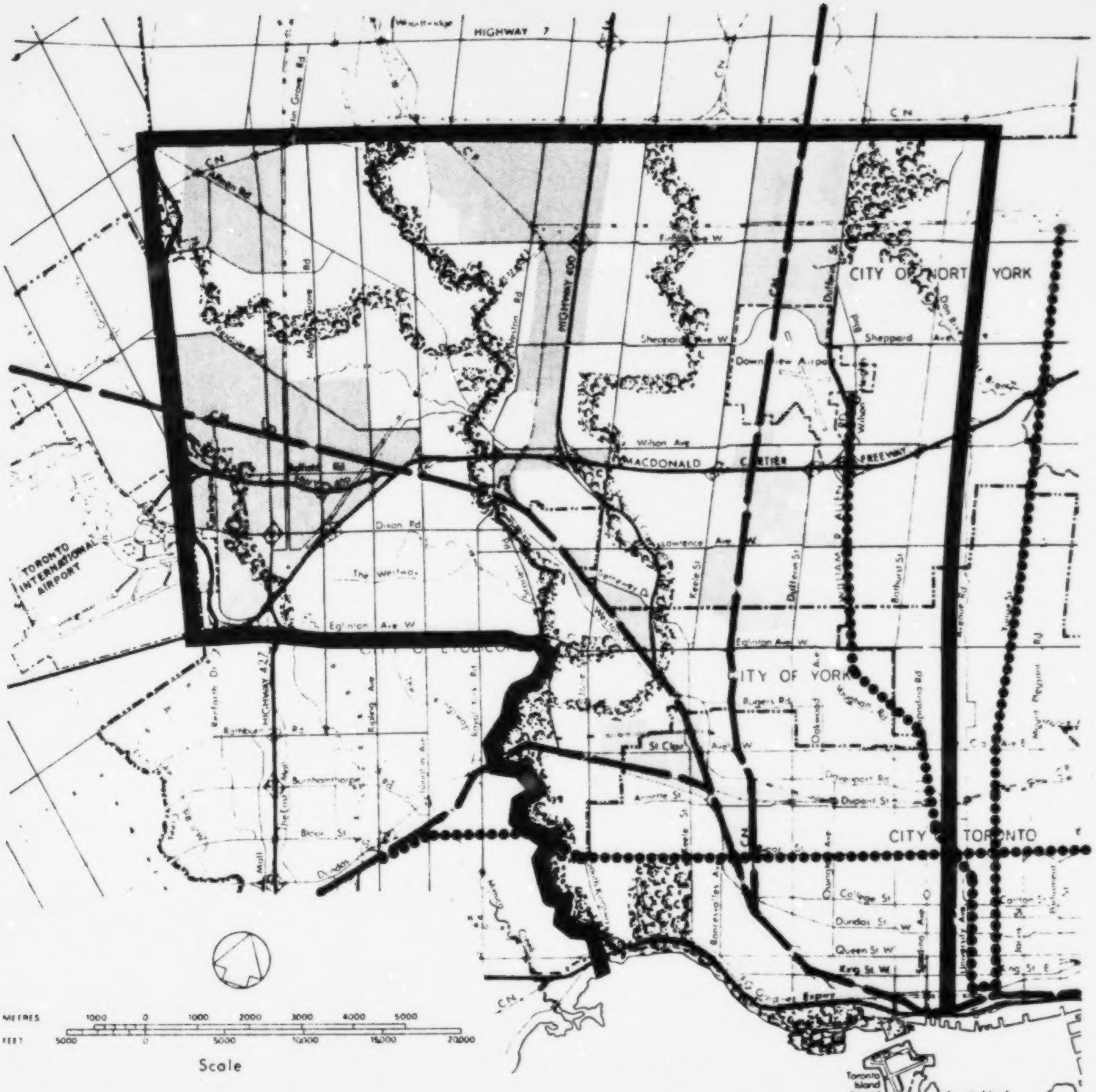
- for both road and transit systems, document existing capacities;
- identify existing capacity deficiencies and major problem areas;
- assess impacts of facilities and improvements currently under consideration;
- identify future capacity deficiencies, travel patterns and major problem areas;
- document and recommend additional detailed studies to evaluate potential improvements for deficiencies and problem areas.

Study Organization, Schedule and Budget

Staff of the Roads and Traffic and Planning Departments plus the T.T.C. will contribute to the Northwest Metro Transportation Study which would be co-ordinated by an inter-agency Steering Committee under the overall direction of the T.T.P.C. Liaison with the affected area municipalities would be maintained during the course of the study.

The timing of the Northwest Metro Transportation Study will be dependent largely on the schedule of the proposed Metro-wide truck survey, which, if approved, can be expected to take place early in the fall of 1986. On that basis, it is expected that the Needs Analysis for the Northwest Metro Transportation Study can be completed by the spring of 1987. At the technical level, a significant portion of the analysis can be undertaken by in-house staff, however, the management of the project cannot be undertaken internally due to the work program which is already committed. Therefore, a consultant is required at a cost not to exceed $50,000.00 to provide for day-to-day project management, report preparation and some technical analysis. Such funds, however, have not been provided for in the current estimates of either the Roads and Traffic Department or the Planning Department and, therefore, funds for 1986 in the amount of $30,000.00 would have to be provided from the Metropolitan Contingency Account. The remaining $20,000.00 consultant cost would be included in the Planning Department's 1987 Estimates. The cost of the consultant assistance would be eligible for a 50 per cent Ministry of Transportation and Communications subsidy.

DCF/br


HIGHWAY 7
CN
Finch Ave W
CITY OF NORTH YORK
Sheppard Ave W
Sheppard Ave
Downsview Airport
Wilson Ave
MACDONALD CARTIER FREEWAY
HIGHWAY 400
Weston Rd
Dixon Rd
The Westway
Lawrence Ave W
Keele St
Dufferin St
Bathurst St
WILLIAM R. ALLEN
Eglinton Ave W
CITY OF ETOBICOKE
CITY OF YORK
Rogers Rd
Oakwood Ave
Spadina Rd
Mount Pleasant Rd
HIGHWAY 427
Rathburn Rd
Burnhamthorpe Rd
Bloor St
Dundas St
St Clair Ave W
Davenport Rd
Dupont St
Annette St
CITY OF TORONTO
College St
Dundas St W
Queen St W
King St W
King St E
Carlton St
University Ave
Yonge St
F.G. Gardiner Expwy
TORONTO INTERNATIONAL AIRPORT
Toronto Island Airport
Toronto Islands
METRES 1000 0 1000 2000 3000 4000 5000
FEET 5000 0 5000 10000 15000 20000
Scale

LEGEND

●●●●●●●●● T.T.C. RAPID TRANSIT

— — GO RAIL LINES

▭ INDUSTRIAL LANDS

▨ VALLEY LANDS & OPEN SPACE

NORTHWEST CORRIDOR TRANSPORTATION STUDY
EXHIBIT 1: STUDY AREA

M.T.P.D. March, 1986

APPENDIX B

SUMMARY OF BACKGROUND REPORTS FOR THE NORTHWEST METRO TRANSPORTATION STUDY

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1. **Report and Analysis of Study for the Proposed North West Drive and Extension of Highway 400, - Metropolitan Planning Board, 1956.**

   This report makes recommendations with respect to the Spadina Expressway and the Highway 400 extension. Six recommendations are suggested which generally favour the construction of both the Spadina Expressway and rapid transit line as well as the Highway 400 extension.

2. **Highway 400 Extension and Crosstown Expresway - Metropolitan Planning Board, 1958.**

   This report is primarily a technical report prepared to answer the request from Department of Roads and Traffic Committee to bring up-to-date plans of the Highway 400 Extension and Crosstown Expressway. No particular conclusions or proposals are made.

3. **Report on the proposed Spadina Expressway and Rapid Transit - Metropolitan Planning Board, 1961.**

   This report examines in detail, the proposed Spadina Expressway and Rapid Transit. It covers basic, general and detailed planning principles, timing of construction, various rapid transit proposals and the Crosstown Expressway. The report supports the construction of both of these facilities and presents a series of five recommendations each including 'sub' recommendations. The primary recommendation is however, that the Spadina Expressway be approved in principle and that the alignment of the Crosstown Expressway be along the Hydro R.O.W. north of the CPR railway.

4. **Functional Planning Report: Proposed Highway 400 Extension from McDonald Cartier Freeway to Richview Expressway, - Department of Highways, 1965.**

   This report is a functional design report of the Highway 400 extension from Jane Street to the Richview Expressway and is based on the assumption that the Richview Expressway would be built by Metro and that a freeway design is required from Eglinton South into the centre of the City. The report outlines schedules, cost estimates, design standards, cross sections, clearance and illuminations of various proposed alignments. The recommended alignment, the Black Creek Ravine is finally analyzed from other more specific technical stand points.

   (Note: About half of this report consits of detailed technical drawings)

5. **A Planning Review and Appraisal: William R. Allen Expressway and Rapid Transit Line, - Metropolitan Toronto Planning Board, 1970.**

   This report analyzes the entire project especially with respect to its need and its effect on the urban structure. It also analyzes the effect on the surrounding areas as well as downtown Toronto. The report draws numerous conclusions, the main one being that a combined expressway and rapid transit facility is required in this corridor.

6. **Functional Design Report South from Eglinton Avenue: William R. Allen Expressway and Rapid Transit Line. - Metropolitan Toronto Roads and Traffic Department, 1970.**

   This technical report describes the functional design plan of Allen Expressway from Eglinton Avenue to its southerly terminus - Harbord Street. It includes the alignment of the Rapid Transit line proposed in conjunction with the Expressway. Also covered in this report are detailed descriptions of various alternative routes. A desired route alignment is chosen in the end - Option C.

7. **William R. Allen Expressway and Rapid Transit Line, - 1970.**

   This report presents a summary of answers to technical questions raised at the Transportation Committee Hearings. The response to the specific questions raised deal with capacity issues, particular sections of the Expressway as well as with the actual construction of the facility. The report does not contain any recommendations or conclusions.

8. **Spadina Rapid Transit Alignment Study. Evaluation of the Relative Performance of Five Selected Alignments: - Report of the Joint Technical Transportation Planning Committee, 1971.**

   Five alignments for the rapid transit line are described and evaluated in this study. It is concluded that the best overall performance in the evaluation is by alighment 9C. This alignment proceeds through Cedarvale Park in a covered structure. It emerges from the park near Heathdale and Pinewood from where it then proceeds towards Bathurst. It then turns south from Claxton Boulevard into Raglan Avenue and continues south to London Street. At London Street, it follows Bloor Street to Spadina.

9. **Spadina Terminal Interchange Project, - Kates,Peat,Marwick & Co., 1971.**

   This report was prepared in order to suggest ways to deal with the problems created by the decision to terminate the Spadina Expressway at Lawrence Avenue. The main recommendation is for the construction of 2 modules of parking between Lawrence and Glencairn Avenues. Both modules could be accessed directly from the expressway and are also connected directly to a subway platform. It is noted that this system could ultimately be expanded to four modules. The second recommendation is the conversion of the Spadina R.O.W. south of Glencairn Avenue to Eglinton Avenue into a public park.

10. **Feasible Uses of William R. Allen Expressway between Lawrence and Eglinton. - Report of the Joint Technical Transportation Planning Committee, 1972.**

    This study is in response to the Metropolian Council's request to report on feasible uses that Allen Road could be put and also possible road improvements which may be required in the Allen Road corridor. There are three recommendations, which suggest the construction of a four lane arterial road between Lawrence and Eglinton, exclusive bus lanes and express bus service and the construction of commuter parking lot at Wilson Avenue and Wilson Heights Boulevard. The study also concludes that the Allen Road closing south of Yorkdale Road should not be contemplated without major improvements at Bathurst and Dufferin Street interchanges with the Highway 401.

11. **Evaluation of Alternate Rapid Transit Systems for the Spadina Corridor, - Report of the Joint Technical Transportation Committe, 1973.**

This report evaluates two modes, (1) Rapid Transit Subway, and (2) Intermediate Capacity Transit, for the Spadina Corridor. The conclusions show that environmental and cost factors weigh equally on both systems. However, the need for a full scale subway facility is indicated mainly because of capacity considerations and because it is desirable to integrate this system with the existing subway system.

12 **Evaluation of Transportation Alternatives - Report No.13, MTTPR, 1973**

The purpose of this report is to develop an evaluation framework to assess the merits of different urban transportation alternatives in the Metropolitan Toronto Transportation Plan Review. At the same time, various evaluation techniques are described and assessed and the Metropolitan experience with alternatives evaluation is reviewed. Numerous conclusions are outlined but probably the most important one is that "it is more effective to try to achieve widespread acceptance of specific alternatives which meet a variety of perhaps conflicting goals than to try for consensus on operational objectives". It is also noted that public involvement in this process should be encouraged and that the user, the operator and the community should be taken into consideration in the evaluation process.

13 **Strengths and Weaknesses Part 2: Road System, - Report No.19 MTTPR, 1973**

This report is mainly concerned with the strengths and weaknesses of the Metropolitan road system prior to 1973. Continuity, congestion and accessibility are the criteria used to describe the status of the road system. Some of the weaknesses important to this study are that (1) there is no convenient access from NW Metro to downtown, (2) accessibility from the NW to the downtown core at peak periods is poor because of the lack of dirct freeway access, and (3) accessibility to employment from Downsview, Rexdale, and South Etobicoke is adequate to good because large proportions of the labour force are employed locally.

14 **Strengths and Weaknesses Part 4: Goods Movement - Report No.21 of MTTPR**

This short report outlines the strengths and weaknesses of goods movement within Metropolitan Toronto. There are a number of general conclusions but the most relevant ones to this study are the following. (1) Existing goods terminals are well located with respect to expressway and arterial road networks (2) Keele/Dufferin corridor is congested with trucks which leads to adverse effects on neighbouring residential areas.

15. **Strengths and Weaknesses Part 9: Summary, - Report No.26 of MTTPR, 1973**

This report is an amalgamation of the conclusions presented in other "strengths and weaknesses" reports. These conclusions are outlined for different parts of Metro Toronto. The general conclusions outlined for NW Metro are the following (1) low level of transportation service in NW (2) access to CBD is slow (3) transit service to NE from NW is even worse than to CBD (4) road service is better but few arterial roads radiate from the CBD (5) arterial roads provide very slow travel. The strengths outlined are (1) for those people on the eastern boundary of the sector, good access to public transit is available, and that (2) the western and southern parts of the sector have excellent accessibility to the CBD. The weaknesses of public transit in this sector are that surface feeders to the subways are slow and have long distances to travel and that in general, overall acessibility is considered unsatisfactory in this sector. The problem for automobile travel is that Bloor and Islington, the junction area and Lawrence Avenue are very congested.

16. **Review of Highway 400 Extension. Report No.44 of MTTPR, 1973**

The purpose of this study is to review the needs for the Highway 400 extension as well as to determine the implications associated in the construction of this facility. There are no conclusions or recommendations presented since this is mainly a review of the then curent developments. It is basically pointed out in this review that since the cancellation of the Spadina Expressway, the extent to which development in the NW corridor should be promoted, has not been examined. As a result, the importance of the Highway 400 extension has not been established.

17. **Performance and Impact of the Alternatives-Year 2000, Report No.63 of MTTPR, 1975.**

This report presents the detailed technical background information for the Summary (No.64) Report. The report deals primarily with the technical analysis of land use and transportation alternatives and ultimately presents a technical estimate of the performance and impact of the various alternatives considered.

18. **Choices for the Future: Summary Reports,- Report No.64 of MTTPR, 1975**

The findings of the Metropolitan Toronto Transportation Plan Review are summarized in this report. Conclusions and recommendations are presented in 7 categories one of which is Northwest Metro. The major conclusion for this category is that the NW sector is more poorly served by roads than any other area in Metro. Serious deficiencies in road capacity are anticipated especially with the continued development of Brampton and Mississauga. Two options are suggested by which road deficiencies could be alleviated. One is by the construction and reconstruction of major arterial roads. This includes the construction of the Highway 400 extension and the Spadina

Expressway as major arterial roads. The second option is the construction of a major expressway, either the Spadina Expressway or the Highway 400 Extension. The latter expressway appears to be the preferred one. The second option would also involve major improvements at interchanges to the expressway.

19. **Proposed Spadina Subway: Northern Extension Property and Alignment Considerations, - TTC Engineering & Construction, January 1978.**

This brief report summarizes the conclusions of a study undertaken to determine the feasibility of establishing a transit connection between Wilson Station and the proposed Dufferin Transportation Corridor. The proposed corridor would be located on the western side of the Federal Lands and would accommodate both expressway and transit traffic to the Dufferin Street and Sheppard Avenue intersection. The Corridor would be 150' wide with 50' reserved for transit lanes and the remaining 100' for expressway lanes.
Three items were evaluated in the study (1) LRT,subway and bus connections (2) the need to make use of the properties allocated to a Regional and Auxiliary bus terminal at Wilson Station, (3) the property that would have to be reserved for each of the transit modes. The main conclusion of this study is that any of the three transit nodes is feasible to provide service north from Wilson Station to the Transportation Corridor. The other conclusion specifically the prices of property to be protected for each of the different transit alternatives.

20. **Northwest Metro Arterial-South Portion Eglinton Avenue to St.Clair Avenue Route Planning Study - Technical Report, MTC, 1978**

The purpose of this report is to summarize the Route Planning study for the portion of the NW Metro arterial in the Highway 400 corridor south of Eglinton Avenue. Eleven different alternatives were developed. The recommended alternative proceeds south from Eglinton Avenue on the west edge of Keelesdale Park, crosses under the CPR and CNR lines and terminates at the Weston Road and Humber Boulevard intersection.

21. **Origin-Destination Survey & Parking Lot Patrons at Wilson Subway Station - Toronto Transit Commission, December 1981.**

This report summarizes the results of an O-D survey conducted at the Wilson subway station three months after the opening of the Spadina subway line. The primary conclusion of this study is that the two Wilson Commuter parking lots are well used because - "the combined convenience of the car and subway access optimize the accessibility and convenience features of both modes in a complementary fashion". Commuter parking facilities thus serve to reinforce the use of public transit because their parking rates are highly competitive with those found in the CBD.

22. **Spadina Corridor Licence Plate Origin/Destination Survey, - Metropolitan Toronto Planning Department, 1980**

The purpose of this survey was to estimate the demand for a parking garage on Spadina Avenue south of Highway 401. The study confirmed some expected results but it also concluded that even though there is a large market for park'n'ride facilities, conditions will have to change considerably in order for people to change from driving their automobiles downtown to parking at a convenient location and going downtown by transit. This is further confirmed by the low parking costs in the central area which make park'n'ride garages less attractive in the suburbs.

23. **Origin-Destination Survey of Parking Lot Patrons at Subway Stations - Toronto Transit Commission, December, 1981**

This report outlines the results of O-D surveys conducted at ten commuter parking lots. The results are summarized for each parking lot. The most relevant ones for the NW study are the three lots located at the Wilson Station on the Spadina line. The following are the main results. The three lots at Wilson provide 2043 parking spaces in total. Trip origins are primarily from the north and west. 26% of the people using the Wilson parking lots are from Thornhill, Vaughan, Brampton, Bramalea and Mississauga. There is a strong (94.2%) CBD orientation of trips. Evening usage of these three lots is almost non-existant. An interesting result is also that 11.5% of the users of this lot are students. This is double the figure obtained at the other lots. In general, the results indicate that commuter parking lots are very popular, and allow people to commute longer distances than by one mode alone.

24. **Origin Destination Survey of Parking Lot Patrons at Subway Stations, 1984, - TTC, March, 1985**

This report, like the one in 1981 outlines the results of O-D surveys conducted at 10 commuter parking lots. The conclusions are generally the same as outlined in the 1981 survey since little change has occurred in the trip origin and destination patterns. The main difference since the 1981 survey, however, is the addition of the Yorkdale parking deck. This has resulted in a decrease in "maximum accummulation as a percentage of Capacity" at the Wilson Station parking lots. The most important trend cited was the increasing proportion of commuters originating from areas outside of Metropolitan Toronto. This trend is anticipated to continue with the expansion of the surrounding municipalities and as commuter parking lots are located closer to the metropolitan boundaries.

25 **Finch Avenue West Environmental and Needs Assessment, - Marshall Macklin Monaghan for Metropolitan Department of Roads and Traffic, April, 1985**

The current Official Plan includes Finch Avenue West extension from Islington Avenue to Albion Road with a statement that environmental and needs assessment studies are required before a final decision can be made on this connection. It is the purpose of this report then to evaluate this extension from an environmental and a needs perspective. Four alternatives within the undertaking were considered: (1) Traffic Operational Improvements (2) Steeles Avenue widening to six lanes (3) Wilson Avenue to Rexdale Boulevard connection (4) Finch Avenue extension. The last alternative (4) was considered to be the best and six alignments within this category were evaluated on land use and development, social impact, natural environment, design considerations, need and cost.

The report concludes that there are 5 benefits from the Finch Avenue West extension to the residents of the area and to those passing through. These are (1) the provision of a direct link (2) better traffic operations at intersections in the study area (3) more direct T.T.C. surface transit routes (4) more direct routes for emergency vehicles (5) the accommodation of future travel demands related to developments in the area.

26. **Sheppard/Finch Rapid Transit Corridor Study, - Summary Report, Network 2011, May, 1985**

This report supplements the final Network 2011 report. Five recommendations are made in this report but only one is of relevance to the NW Metro Study. It is recommended that the "Metropolitan Official Plan be amended to show a rapid transit facility on Sheppard Avenue and Brimley Road from Allen Road to the Scarborough City Centre, including an extension of the Spadina subway northerly to Sheppard Avenue."

27 **West Metro Boundary Transportation Study - Metropolitan Toronto Planning Department, May, 1986**

This study reviews forecasts for 2011 of cross boundary commuting from the west into Metro. It concludes that, with all reasonable road improvements carried out near the boundary, a major shift to transit usage has to take place and is best achieved by GO Transit expansion, new bus services into Etobicoke and fare and service integration between the T.T.C., GO Transit and Mississauga and Brampton Transit authorities.